



James Crow

Engraved by W H Lusk

ALEXANDER WILSON
The American Ornithologist

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FAMILY XVII.

PRESSIROSTRES, CUVIER.

GENUS XXXIX. — *CHARADRIUS*, LINNÆUS.

SUBGENUS I. — *CHARADRIUS*, LINNÆUS.

193. *CHARADRIUS MELODUS*, BONAPARTE.

CHARADRIUS HIATICULA, WILSON. — RINGED PLOVER.

WILSON, PLATE XXXVII. FIG. III. ADULT.

EDINBURGH COLLEGE MUSEUM.

THE ringed plover is very abundant on the low sandy shores of our whole sea coast during summer. They run, or rather seem to glide, rapidly along the surface of the flat sands, frequently spreading out their wings and tail like a fan, and fluttering along, to draw or entice one away from their nests. These are formed with little art, being merely shallow concavities dug in the sand, in which the eggs are laid, and, during the day at least, left to the influence of the sun to hatch them. The parents, however, always remain near the spot to protect them from injury, and, probably, in cold, rainy, or stormy weather, to shelter them with their bodies. The eggs are three, sometimes four, large for the bird, of a dun clay colour, and marked with numerous small spots of reddish purple.

The voice of these little birds, as they move along the sand, is soft and musical, consisting of a single plaintive note occasionally repeated. As you approach near their nests, they seem to court your attention, and, the moment they think you observe them, they

spread out their wings and tail, dragging themselves along, and imitating the squeaking of young birds; if you turn from them, they immediately resume their proper posture, until they have again caught your eye, when they display the same attempts at deception as before. A flat, dry, sandy beach, just beyond the reach of the summer tides, is their favourite place for breeding.

This species is subject to great variety of change in its plumage. In the month of July, I found most of those that were breeding on Summers's Beach, at the mouth of Great Egg Harbour, of a light shade; but, about the beginning or middle of October, they had become much darker above, and their plumage otherwise varied. They were then collected in flocks; their former theatrical and deceptive manœuvres seemed all forgotten. They appeared more active than before, as well as more silent, alighting within a short distance of one, and feeding about without the least appearance of suspicion. At the commencement of winter, they all go off towards the south.

This variety of the ringed plover is seven inches long, and fourteen in extent; the bill is reddish yellow for half its length, and black at the extremity; the front and whole lower parts pure white, except the side of the breast, which is marked with a curving streak of black, another spot of black bounding the front above; back and upper parts, very pale brown, inclining to ashy white, and intermixed with white; wings, pale brown; greater coverts, broadly tipped with white; interior edges of the secondaries, and outer edges of the primaries, white, and tipped with brown; tail, nearly even, the lower half white, brown towards the extremity, the outer feather pure white, the next white with a single spot of black; eye, black, and full, surrounded by a narrow ring of yellow; legs, reddish yellow; claws, black; lower side of the wings, pure white.

194. *CHARADRIUS SEMIPALMATUS*, BONAPARTE.*TRINGA HIATICULA*, WILSON. — RING PLOVER.

WILSON, PLATE LIX. FIG. III.

A BIRD by this name has just been described, under the supposition that it was the ring plover in its summer dress; but which, notwithstanding its great resemblance to the present, I now suspect to be a different species. Fearful of perpetuating error, and anxious to retract, where this may inadvertently have been the case, I shall submit to the consideration of the reader the reasons on which my present suspicions are founded.

The present species, or true ring plover, and also the former, or light coloured bird, both arrive on the sea coast of New Jersey late in April. The present kind continues to be seen in flocks until late in May, when they disappear, on their way farther north; the light coloured bird remains during the summer, forms its nest in the sand, and generally produces two brood in the season. Early in September the present species returns in flocks, as before; soon after this, the light coloured kind go off to the south, but the other remain a full month later. European writers inform us, that the ring plover has a sharp twittering note; and this account agrees exactly with that of the present: the light coloured species, on the contrary, has a peculiarly soft and musical note, similar to the tone of a German flute, which it utters while running along the sand, with expanded tail and hanging wings, endeavouring to decoy you from its nest. The present species is never seen to breed here; and, though I have opened great numbers of them as late as the 20th of May, the eggs which the females contained were never larger than small bird shot; while, at the same time, the light coloured kind had every where begun to lay in the little cavities which they had dug in the sand on the beach. These facts being considered, it seems difficult

to reconcile such difference of habit in one and the same bird. The ring plover is common in England, and agrees exactly with the one now before us; but the light coloured species, as far as I can learn, is not found in Britain; specimens of it have indeed been taken to that country, where the most judicious of their ornithologists have concluded it to be still the ring plover, but to have changed, from the effect of climate. Mr Pennant, in speaking of the true ring plover, makes the following remarks: "Almost all which I have seen from the northern parts of North America have had the black marks extremely faint, and almost lost. The climate had almost destroyed the specific marks, yet in the bill and habit preserved sufficient to make the kind very easily ascertained." These traits agree exactly with the light coloured species just described. But this excellent naturalist was perhaps not aware, that we have the true ring plover here in spring and autumn, agreeing in every respect with that of Britain, and at least in equal numbers; why, therefore, has not the climate equally affected the present and the former sort, if both are the same species? These inconsistencies cannot be reconciled but by supposing each to be a distinct species, which, though approaching extremely near to each other in external appearance, have each their peculiar notes, colour, and places of breeding.

The ring plover is seven inches long, and fourteen inches in extent; bill, short, orange coloured, tip with black; front and chin, white, encircling the neck; upper part of the breast, black; rest of the lower parts, pure white; fore part of the crown, black; band from the upper mandible covering the auriculars, also black; back, scapulars, and wing-coverts, of a brownish ash colour; wing-quills, dusky black, marked with an oval spot of white about the middle of each; tail, olive, deepening into black, and tip with white; legs, dull yellow; eye, dark hazel; eyelids, yellow.

This bird is said to make no nest, but to lay four eggs of a pale ash colour, spotted with black, which she

deposits on the ground.* The eggs of the light coloured species, formerly described, are of a pale cream colour, marked with small round dots of black, as if done with a pen.

The ring plover, according to Pennant, inhabits America down to Jamaica and the Brazils; is found in summer in Greenland; migrates from thence in autumn; is common in every part of Russia and Siberia; was found by the navigators, as low as Owhyhee, one of the Sandwich Islands, and as light coloured as those of the highest latitudes.†

195. *CHARADRIUS WILSONIUS*, WILSON. — WILSON'S PLOVER.

WILSON, PLATE LXXIII. FIG. V.

OF this neat and prettily marked species I can find no account, and have concluded that it has hitherto escaped the eye of the naturalist. The bird from which this description was taken, was shot the 13th of May, 1813, on the shore of Cape Island, New Jersey, by my ever-regretted friend; and I have honoured it with his name.‡ It was a male, and was accompanied by another of the same sex and a female, all of which were fortunately obtained.

This bird very much resembles the ring plover, except in the length and colour of the bill, its size, and in wanting the yellow eyelids. The males and females of this species differ in their markings, but the ring plovers nearly agree. We conversed with some sportsmen of Cape May, who asserted that they were acquainted with these birds, and that they sometimes made their appearance in flocks of considerable numbers; others had no knowledge of them. That the species is rare we were well convinced, as we had diligently explored the shore of a considerable part of Cape May, in the vicinity of Great Egg Harbour, many times at different

* BEWICK.

† *Arctic Zoology*, p. 485.

‡ This description, from vol. ix. of the original edition, is written by Mr Ord.

seasons, and had never seen them before. How long they remain on our coast, and where they winter, we are unable to say. From the circumstance of the oviduct of the female being greatly enlarged, and containing an egg half grown, apparently within a week of being ready for exclusion, we concluded that they breed there. Their favourite places of resort appear to be the dry sand flats on the sea shore. They utter an agreeable piping note.

This species is seven inches and three quarters in length, and fifteen and a half in extent; the bill is black, stout, and an inch long, the upper mandible projecting considerably over the lower; front, white, passing on each side to the middle of the eye above, and bounded by a band of black of equal breadth; lores, black; eyelids, white; eye, large and dark; from the middle of the eye backwards the stripe of white becomes duller, and extends for half an inch; the crown, hind head, and auriculars, are drab olive; the chin, throat, and sides of the neck, for an inch, pure white, passing quite round the neck, and narrowing to a point behind; the upper breast below this is marked with a broad band of jet black; the rest of the lower parts, pure white; upper parts pale olive drab; along the edges of the auriculars and hind head, the plumage, where it joins the white, is stained with raw terra sienna; all the plumage is darkest in the centre; the tertials are fully longer than the primaries, the latter brownish black, the shafts and edges of some of the middle ones white; secondaries and greater coverts, slightly tipped with white; the legs are of a pale flesh colour; toes bordered with a narrow edge; claws and ends of the toes, black; the tail is even, a very little longer than the wings, and of a blackish olive colour, with the exception of the two exterior feathers, which are whitish, but generally the two middle ones only are seen.

The female differs in having no black on the forehead, lores, or breast, those parts being pale olive.

196. *CHARADRIUS VOCIFERUS*, LINNÆUS AND WILSON.

KILDEER PLOVER.

WILSON, PLATE LIX. FIG. VI.

EDINBURGH COLLEGE MUSEUM.

THIS restless and noisy bird is known to almost every inhabitant of the United States, being a common and pretty constant resident. During the severity of winter, when snow covers the ground, it retreats to the sea shore, where it is found at all seasons; but no sooner have the rivers broke up, than its shrill note is again heard, either roaming about high in air, tracing the shore of the river, or running amidst the watery flats and meadows. As spring advances, it resorts to the newly ploughed fields, or level plains bare of grass, interspersed with shallow pools; or, in the vicinity of the sea, dry bare sandy fields. In some such situation it generally chooses to breed, about the beginning of May. The nest is usually slight, a mere hollow, with such materials drawn in around it as happen to be near, such as bits of sticks, straw, pebbles, or earth. In one instance I found the nest of this bird paved with fragments of clam and oyster shells, and very neatly surrounded with a mound or border of the same, placed in a very close and curious manner. In some cases there is no vestige whatever of a nest. The eggs are usually four, of a bright rich cream or yellowish clay colour, thickly marked with blotches of black. They are large for the size of the bird, measuring more than an inch and a half in length, and a full inch in width, tapering to a narrow point at the great end.

Nothing can exceed the alarm and anxiety of these birds during the breeding season. Their cries of *kildeer*, *kildeer*, as they winnow the air overhead, dive, and course around you, or run along the ground counterfeiting lameness, are shrill and incessant. The moment they see a person approach, they fly or run to attack him with their harassing clamour, continuing it over

so wide an extent of ground, that they puzzle the pursuer as to the particular spot where the nest or young are concealed; very much resembling, in this respect, the lapwing of Europe. During the evening, and long after dusk, particularly in moonlight, their cries are frequently heard with equal violence, both in the spring and fall. From this circumstance, and their flying about both after dusk and before dawn, it appears probable that they see better at such times than most of their tribe. They are known to feed much on worms, and many of these rise to the surface during the night. The prowling of owls, may also alarm their fears for their young at those hours: but, whatever may be the cause, the facts are so.

The kildeer is more abundant in the Southern States in winter than in summer. Among the rice fields, and even around the planter's yards, in South Carolina, I observed them very numerous in the months of February and March. There the negro boys frequently practise the barbarous mode of catching them with a line, at the extremity of which is a crooked pin with a worm on it. Their flight is something like that of the tern, but more vigorous; and they sometimes rise to a great height in the air. They are fond of wading in pools of water; and frequently bathe themselves during the summer. They usually stand erect on their legs, and run or walk with the body in a stiff horizontal position; they run with great swiftness, and are also strong and vigorous in the wings. Their flesh is eaten by some, but is not in general esteem; though others say, that in the fall, when they become very fat, it is excellent.

During the extreme droughts of summer, these birds resort to the gravelly channel of brooks and shallow streams, where they can wade about in search of aquatic insects: at the close of summer, they generally descend to the sea shore, in small flocks, seldom more than ten or twelve being seen together. They are then more serene and silent, as well as difficult to be approached.

The kildeer is ten inches long, and twenty inches in extent; the bill is black; frontlet, chin, and ring round

the neck, white; fore part of the crown, and auriculars from the bill backwards, blackish olive; eyelids, bright scarlet; eye, very large and of a full black; from the centre of the eye backwards, a stripe of white; round the lower part of the neck is a broad band of black; below that, a band of white, succeeded by another rounding band or crescent of black; rest of the lower parts, pure white; crown and hind head, light olive brown; back, scapulars, and wing-coverts, olive brown, skirted with brownish yellow; primary quills, black, streaked across the middle with white; bastard wing tip with white; greater coverts, broadly tipped with white; rump and tail-coverts, orange; tail, tapering, dull orange, crossed near the end with a broad bar of black, and tipped with orange, the two middle feathers near an inch longer than the adjoining ones, legs and feet, a pale light clay colour. The tertials, as usual in this tribe, are very long, reaching nearly to the tips of the primaries; exterior toe joined by a membrane to the middle one, as far as the first joint.

197. *CHARADRIUS FLUVIALIS*, LINNÆUS AND WILSON.

GOLDEN PLOVER.

WILSON, PLATE LIX. FIG. V. — EDINBURGH COLLEGE MUSEUM.

THIS beautiful species visits the sea coast of New York and New Jersey in spring and autumn; but does not, as far as I can discover, breed in any part of the United States. They are most frequently met with in the months of September and October; soon after which they disappear. The young birds of the great black-bellied plover are sometimes mistaken for this species. Hence the reason why Mr Pennant remarks his having seen a variety of the golden plover, with black breasts, which he supposed to be the young.*

The golden plover is common in the northern parts of Europe. It breeds on high and heathy mountains. The female lays four eggs, of a pale olive colour, varie-

* *Arctic Zoology*, p. 484.

gated with blackish spots. They usually fly in small flocks, and have a shrill whistling note. They are very frequent in Siberia, where they likewise breed; extend also to Kamtschatka, and as far south as the Sandwich Isles. In this latter place, Mr Pennant remarks, "they are very small."

Although these birds are occasionally found along our sea coast, from Georgia to Maine, yet they are nowhere numerous; and I have never met with them in the interior. Our mountains being generally covered with forest, and no species of heath having, as yet, been discovered within the boundaries of the United States, these birds are probably induced to seek the more remote arctic regions of the continent to breed and rear their young in, where the country is more open, and unencumbered with woods.

The golden plover is ten inches and a half long, and twenty-one inches in extent; bill, short, of a dusky slate colour; eye, very large, blue black; nostrils, placed in a deep furrow, and half covered with a prominent membrane; whole upper parts, black, thickly marked with roundish spots of various tints of golden yellow; wing-coverts and hind part of the neck, pale brown, the latter streaked with yellowish; front, broad line over the eye, chin and sides of the same, yellowish white, streaked with small pointed spots of brown olive; breast, grey, with olive and white; sides, under the wings, marked thinly with transverse bars of pale olive; belly and vent, white; wing-quills, black, the middle of the shafts marked with white; greater coverts, black, tipped with white; tail, rounded, black, barred with triangular spots of golden yellow; legs, dark dusky slate; feet, three-toed, with generally the slight rudiments of a heel, the outer toe connected as far as the first joint with the middle one. The male and female differ very little in colour.

SUBGENUS II. — *SQUATAROLA*, CUVIER.198. *CHARADRIUS HELVETICUS*, BONAPARTE.*CHARADRIUS APRICARIUS*, WILSON. — BLACK-BELLIED PLOVER.

WILSON, PLATE LVII. FIG. IV. — EDINBURGH COLLEGE MUSEUM.

THIS bird is known in some parts of the country by the name of the large whistling field plover. It generally makes its first appearance in Pennsylvania late in April; frequents the countries towards the mountains; seems particularly attached to newly ploughed fields, where it forms its nest of a few slight materials, as slightly put together. The female lays four eggs, large for the size of the bird, of a light olive colour dashed with black; and has frequently two brood in the same season. It is an extremely shy and watchful bird, though clamorous during breeding time. The young are without the black colour on the breast and belly until the second year, and the colours of the plumage above are likewise imperfect till then. They feed on worms, grubs, winged insects, and various kinds of berries, particularly those usually called dew-berries, and are at such times considered exquisite eating. About the beginning of September, they descend with their young to the sea coast, and associate with the numerous multitudes then returning from their breeding places in the north. At this season they abound on the plains of Long Island. They have a loud whistling note; often fly at a great height; and are called by many gunners along the coast the black-bellied kildeer. The young of the first year have considerable resemblance to those of the golden plover; but may be easily distinguished from this last by the largeness of their head and bill, and in being at least two inches more in length. The greater number of those which I have examined have the rudiments of a hind toe; but the character and manners of the plover are so conspicuous in the bird, as to determine, at the first glance,

the tribe it belongs to. They continue about the sea coast until early in November, when they move off to the south.

This same bird, Mr Pennant informs us, inhabits all the north of Europe, Iceland, Greenland, and Hudson's Bay, and all the arctic part of Siberia. It is said, that at Hudson's Bay it is called the hawk's-eye, on account of its brilliancy. It appears, says the same author, in Greenland, in the spring, about the southern lakes, and feeds on worms and berries of the heath.

This species is twelve inches long, and twenty-four inches in extent; the bill is thick, deeply grooved on the upper mandible, an inch and a quarter in length, and of a black colour; the head and globe of the eye are both remarkably large, the latter deep bluish black; forehead, white; crown and hindhead, black, spotted with golden yellow; back and scapulars, dusky, sprinkled with the same golden or orange coloured spots, mixed with others of white; breast, belly, and vent, black; sides of the breast, whitish; wing-quills, black; middle of the shafts, white; greater coverts, black, tipped with white; lining of the wing, black; tail, regularly barred with blackish and pure white; tail coverts, pure white; legs and feet, a dusky lead colour; the exterior toe joined to the middle by a broad membrane; hind toe very small.

From the length of time which these birds take to acquire their full colours, they are found in very various stages of plumage. The breast and belly are at first white, gradually appear mottled with black, and finally become totally black. The spots of orange, or golden, on the crown, hindhead, and back, are at first white, and sometimes even the breast itself is marked with these spots, mingled among the black. In every stage the seemingly disproportionate size of the head, and thickness of the bill, will distinguish this species.

GENUS XL — *STREPSILAS*, ILLIGER.199. *STREPSILAS INTERPRES*, ILLIG.—*TRINGA INTERPRES*, WILS.

TURNSTONE.

WILSON, PLATE LVII. FIG. 1. — EDINBURGH COLLEGE MUSEUM.

THIS beautifully variegated species is common to both Europe and America; consequently extends its migrations far to the north. It arrives from the south on the shores of New Jersey in April; leaves them early in June; is seen on its return to the south in October; and continues to be occasionally seen until the commencement of cold weather, when it disappears for the season. It is rather a scarce species in this part of the world, and of a solitary disposition, seldom mingling among the large flocks of other sandpipers; but either coursing the sands alone, or in company with two or three of its own species. On the coast of Cape May and Egg Harbour, this bird is well known by the name of the horse-foot snipe, from its living, during the months of May and June, almost wholly on the eggs or spawn of the great king crab, called here by the common people the horse-foot. This animal is the *monoculus polyhemus* of entomologists. Its usual size is from twelve to fifteen inches in breadth, by two feet in length; though sometimes it is found much larger. The head, or forepart, is semicircular, and convex above, covered with a thin, elastic, shelly case. The lower side is concave, where it is furnished with feet and claws resembling those of a crab. The posterior extremity consists of a long, hard, pointed, dagger-like tail, by means of which, when overset by the waves, the animal turns itself on its belly again. The male may be distinguished from the female by his two large claws having only a single hook each, instead of the forceps of the female. In the bay of Delaware, below Egg Island, and in what is usually called Maurice River Cove, these creatures seem to have formed one of their principal settlements. The bottom of this cove

is generally a soft mud, extremely well suited to their accommodation. Here they are resident, burying themselves in the mud during the winter; but, early in the month of May, they approach the shore in multitudes, to obey the great law of nature, in depositing their eggs within the influence of the sun, and are then very troublesome to the fishermen, who can scarcely draw a seine for them, they are so numerous. Being of slow motion, and easily upset by the surf, their dead bodies cover the shore in heaps, and in such numbers, that for ten miles one might walk on them without touching the ground.

The hogs from the neighbouring country are regularly driven down, every spring, to feed on them, which they do with great avidity; though by this kind of food their flesh acquires a strong disagreeable fishy taste. Even the small turtles, or terrapins, so eagerly sought after by our epicures, contract so rank a taste by feeding on the spawn of the king crab, as to be at such times altogether unpalatable. This spawn may sometimes be seen lying in hollows and eddies in bushels, while the snipes and sandpipers, particularly the turnstone, are hovering about feasting on the delicious fare. The dead bodies of the animals themselves are hauled up in wagons for manure, and when placed at the hills of corn, in planting time, are said to enrich the soil, and add greatly to the increase of the crop.

The turnstone derives its name from another singularity it possesses, of turning over with its bill small stones and pebbles, in search of various marine worms and insects. At this sort of work it is exceedingly dexterous; and, even when taken and domesticated, is said to retain the same habit.* Its bill seems particularly well constructed for this purpose, differing from all the rest of its tribe, and very much resembling in shape that of the common nuthatch. We learn from Mr Pennant that these birds inhabit Hudson's Bay, Greenland, and the arctic flats of Siberia, where they

* CATSBY.

breed, wandering southerly in autumn. It is said to build on the ground, and to lay four eggs, of an olive colour, spotted with black, and to inhabit the isles of the Baltic during summer.

The turnstone flies with a loud twittering note, and runs with its wings lowered; but not with the rapidity of others of its tribe. It examines more completely the same spot of ground, and, like some of the woodpeckers, will remain searching in the same place, tossing the stones and pebbles from side to side for a considerable time.

These birds vary greatly in colour; scarcely two individuals are to be found alike in markings. These varieties are most numerous in autumn when the young birds are about, and are less frequently met with in spring. The most perfect specimens I have examined are as follows:

Length eight inches and a half, extent seventeen inches; bill, blackish horn; frontlet, space passing through the eyes, and thence dropping down and joining the under mandible, black, enclosing a spot of white. Crown, white, streaked with black; breast, black, from whence it turns up half across the neck; behind the eye, a spot of black; upper part of the neck, white, running down and skirting the black breast as far as the shoulder; upper part of the back, black, divided by a strip of bright ferruginous; scapulars, black, glossed with greenish, and interspersed with rusty red; whole back below this, pure white, but hid by the scapulars; rump, black; tail-coverts, white; tail, rounded, white at the base half, thence black to the extremity; belly and vent, white; wings, dark dusky, crossed by two bands of white; lower half of the lesser coverts, ferruginous; legs and feet, a bright vermilion, or red lead; hind toe, standing inwards, and all of them edged with a thick warty membrane. The male and female are alike variable; and when in perfect plumage nearly resemble each other.

Bewick, in his *History of British Birds*, has figured and described what he considers to be two species of

turnstone; one of which, he says, is chiefly confined to the southern, and the other to the northern parts of Great Britain. The difference, however, between these two appears to be no greater than commonly occurs among individuals of the same flock, and evidently of the same species, in this country. As several years probably elapse before these birds arrive at their complete state of plumage, many varieties must necessarily appear, according to the different ages of the individuals.

GENUS XLI — *HÆMATOPUS*, LINNÆUS

200. *HÆMATOPUS OSTRALÉGUS*, LINNÆUS AND WILSON.

PIED OYSTER-CATCHER.

WILSON, PLATE LXIV. FIG. 11. — EDINBURGH COLLEGE MUSEUM.

THIS singular species, although nowhere numerous, inhabits almost every sea shore, both on the new and old continent, but is never found inland. It is the only one of its genus hitherto discovered, and, from the conformation of some of its parts, one might almost be led by fancy to suppose, that it had borrowed the eye of the pheasant, the legs and feet of the bustard, and the bill of the woodpecker.

The oyster-catcher frequents the sandy sea beach of New Jersey, and other parts of our Atlantic coast in summer, in small parties of two or three pairs together. They are extremely shy, and, except about the season of breeding, will seldom permit a person to approach within gunshot. They walk along the shore in a watchful, stately manner, at times probing it with their long wedge-like bills, in search of small shell fish. This appears evident, on examining the hard sands where they usually resort, which are found thickly perforated with oblong holes two or three inches in depth. The small crabs called fiddleis, that burrow in the mud at the bottom of inlets, are frequently the prey of the oyster-catcher; as are muscles, spout-fish, and a variety of other shell fish and sea insects with which those shores abound.

The principal food, however, of this bird, according to European writers, and that from which it derives its name, is the oyster, which it is said to watch for, and snatch suddenly from the shells, whenever it surprises them sufficiently open. In search of these, it is reported that it often frequents the oyster beds, looking out for the slightest opening through which it may attack its unwary prey. For this purpose the form of its bill seems very fitly calculated. Yet the truth of these accounts are doubted by the inhabitants of Egg Harbour, and other parts of our coast, who positively assert, that it never hunts such places, but confines itself almost solely to the sands: and this opinion I am inclined to believe correct; having myself uniformly found these birds on the smooth beach bordering the ocean, and on the higher, dry, and level sands, just beyond the reach of the summer tides. On this last situation, where the dry flats are thickly interspersed with drifted shells, I have repeatedly found their nests, between the middle and 25th of May. The nest itself is a slight hollow in the sand, containing three eggs, somewhat less than those of a hen, and nearly of the same shape, of a bluish cream colour, marked with large roundish spots of black, and others of a fainter tint. In some, the ground cream colour is destitute of the bluish tint, the blotches larger, and of a deep brown. The young are hatched about the 25th of May, and sometimes earlier, having myself caught them running along the beach about that period. They are at first covered with down of a grayish colour, very much resembling that of the sand, and marked with a streak of brownish black on the back, rump, and neck, the breast being dusky, where in the old ones it is black. The bill is at that age slightly bent downwards at the tip, where, like most other young birds, it has a hard protuberance that assists them in breaking the shell; but in a few days afterwards this falls off.* These run along the shore with great ease and swiftness.

* Latham observes, that the young are said to be hatched in about three weeks; and though they are wild when in flocks, yet

The female sits on her eggs only during the night, or in remarkably cold and rainy weather; at other times the heat of the sun and of the sand, which is sometimes great, renders incubation unnecessary. But although this is the case, she is not deficient in care or affection. She watches the spot with an attachment, anxiety, and perseverance, that are really surprising, till the time arrives when her little offspring burst their prisons, and follow the guiding voice of their mother. When there is appearance of danger, they squat on the sand, from which they are with difficulty distinguished, while the parents make large circuits around the intruder, alighting sometimes on this hand, sometimes on that, uttering repeated cries, and practising the common affectionate stratagem of counterfeited lameness, to allure him from their young.

These birds run and fly with great vigour and velocity. Their note is a loud and shrill whistling *whEEP-whEEP-whEO*, smartly uttered. A flock will often rise, descend, and wheel in air with remarkable regularity, as if drilled to the business, the glittering white of their wings at such times being very conspicuous. They are more remarkable for this on their first arrival in the spring. Some time ago, I received a stuffed specimen of the oyster-catcher, from a gentleman of Boston, an experienced sportsman, who, nevertheless was unacquainted with this bird. He informed me, that two very old men to whom it was shewn called it a *hagdel*. He adds, "it was shot from a flock, which was first discovered on the beach near the entrance of Boston Harbour. On the approach of the gunner, they rose, and instantly formed in line, like a corps of troops, and advanced in perfect order, keeping well dressed. They made a number of circuits in the air previous to being shot at, but wheeled in line; and the man who fired

are easily brought up tame, if taken young. "I have known them," says he, "to be thus kept for a long time, frequenting the ponds and ditches during the day, attending the ducks and other poultry to shelter of nights, and not unfrequently to come up of themselves as evening approaches." — *General Synopsis*, vol. iii, p. 220.

into the flock, observed that all their evolutions were like a regularly organized military company."

The oyster-catcher will not only take to the water when wounded, but can also swim and dive well. This fact I can assert from my own observation, the exploits of one of them in this way having nearly cost me my life. On the sea beach of Cape May, not far from a deep and rapid inlet, I broke the wing of one of these birds, and being without a dog, instantly pursued it towards the inlet, which it made for with great rapidity. We both plunged in nearly at the same instant; but the bird eluded my grasp, and I sunk beyond my depth; it was not until this moment that I recollected having carried in my gun along with me. On rising to the surface, I found the bird had dived, and a strong ebb current was carrying me fast towards the ocean, encumbered with a gun and all my shooting apparatus; I was compelled to relinquish my bird, and to make for the shore, with considerable mortification, and the total destruction of the contents of my powder horn. The wounded bird afterwards rose, and swam with great buoyancy out among the breakers.

The same day, I shot and examined three individuals of this species, two of which measured each eighteen inches in length, and thirty-five inches in extent; the other was somewhat less. The bills varied in length, measuring three inches and three quarters, three and a half, and three and a quarter, thinly compressed at the point, very much like that of the woodpecker tribe, but remarkably narrowed near the base where the nostrils are placed, probably that it may work with more freedom in the sand. This instrument for two-thirds of its length towards the point, was evidently much worn by digging; its colour, a rich orange scarlet, somewhat yellowish near the tip; eye, large, orbits, of the same bright scarlet as the bill, irides, brilliant yellow, pupil, small, bluish black; under the eye, is a small spot of white, and a large bed of the same on the wing-coverts; head, neck, scapulars, rump, wing-quills, and tail, black; several of the primaries are marked on the

outer vanes with a slanting band of white ; secondaries, white, part of them tipped with black ; the whole lower parts of the body, sides of the rump, tail-coverts, and that portion of the tail which they cover, are pure white ; the wings, when shut, cover the whole white plumage of the back and rump ; legs and naked part of the thighs, pale red ; feet, three-toed, the outer joined to the middle by a broad and strong membrane, and each bordered with a rough warty edge ; the soles of the feet are defended from the hard sand and shells by a remarkably thick and callous warty skin.

On opening these birds, the smallest of the three was found to be a male ; the gullet widened into a kind of crop ; the stomach, or gizzard, contained fragments of shell fish, pieces of crabs, and of the great king crab, with some dark brown marine insects. The flesh was remarkably firm and muscular, the skull, thick and strong, intended, no doubt, as in the woodpecker tribe, for the security of the brain from the violent concussions it might receive while the bird was engaged in digging. The female and young birds have the back and scapulars of a sooty brownish olive.

This species is found as far south as Cayenne and Surinam. Dampier met with it on the coast of New Holland ; the British circumnavigators also saw it on Van Diemen's Land, Terra del Fuego, and New Zealand.

FAMILY XVIII.

HERODII, ILLIGER.

GENUS XLII.—*GRUS*.

201. *GRUS AMERICANA*, BONAP. — *ARDEA AMERICANA*, WILSON

WHOOPIING CRANE.

WILSON, PLATE LXIV. FIG. III.

THIS is the tallest and most stately species of all the feathered tribes of the United States; the watchful inhabitant of extensive salt marshes, desolate swamps, and open morasses in the neighbourhood of the sea. Its migrations are regular, and of the most extensive kind, reaching from the shores and inundated tracts of South America to the arctic circle. In these immense periodical journeys, they pass at such a prodigious height in the air as to be seldom observed. They have, however, their resting stages on the route to and from their usual breeding places, the regions of the north. A few sometimes make their appearance in the marshes of Cape May, in December, particularly on and near Egg Island, where they are known by the name of storks. The younger birds are easily distinguished from the rest by the brownness of their plumage. Some linger in these marshes the whole winter, setting out north about the time the ice breaks up. During their stay, they wander along the marsh and muddy flats of the sea shore in search of marine worms, sailing occasionally from place to place, with a low and heavy flight, a little above the surface; and have at such times a very formidable appearance. At times they utter a loud, clear, and piercing cry, which may be heard at the distance of two miles. They have also various modulations of this singular note, from the peculiarity of which they

derive their name. When wounded, they attack the gunner, or his dog, with great resolution; and have been known to drive their sharp and formidable bill, at one stroke through a man's hand.

During winter, they are frequently seen in the low grounds and rice plantations of the Southern States, in search of grain and insects. On the 10th of February, I met with several near the Waccamau river, in South Carolina; I also saw a flock at the ponds near Louisville, Kentucky, on the 20th of March. They are extremely shy and vigilant, so that it is with the greatest difficulty they can be shot. They sometimes rise in the air spirally to a great height, the mingled noise of their screaming, even when they are almost beyond the reach of sight, resembling that of a pack of hounds in full cry. On these occasions, they fly around in large circles, as if reconnoitring the country to a vast extent for a fresh quarter to feed in. Their flesh is said to be well tasted, nowise savouring of fish. They swallow mice, moles, rats, &c. with great avidity. They build their nests on the ground, in tussocks of long grass, amidst solitary swamps, raise it to more than a foot in height, and lay two pale blue eggs, spotted with brown. These are much larger, and of a more lengthened form than those of the common hen.

The cranes are distinguished from the other families of their genus by the comparative baldness of their heads, the broad flag of plumage projecting over the tail, and in general by their superior size. They also differ in their internal organization from all the rest of the heron tribe, particularly in the conformation of the windpipe, which enters the breast-bone in a cavity fitted to receive it, and after several turns goes out again at the same place, and thence descends to the lungs. Unlike the herons, they have not the inner side of the middle claw pectinated, and, in this species at least, the hind toe is short, scarcely reaching the ground.

The vast marshy flats of Siberia are inhabited by a crane very much resembling the present, with the

exception of the bill and legs being red; like those of the present, the year old birds are said also to be tawny.

It is highly probable that the species described by naturalists as the brown crane (*ardea Canadensis*,) is nothing more than the young of the whooping crane, their descriptions exactly corresponding with the latter. In a flock of six or eight, three or four are usually of that tawny or reddish brown tint on the back, scapulars, and wing-coverts; but are evidently yearlings of the whooping crane, and differ in nothing but in that and size from the others. They are generally five or six inches shorter, and the primaries are of a brownish cast.

The whooping crane is four feet six inches in length, from the point of the bill to the end of the tail, and, when standing erect, measures nearly five feet; the bill is six inches long, and an inch and a half in thickness, straight, extremely sharp, and of a yellowish brown colour; the irides are yellow; the forehead, whole crown, and cheeks, are covered with a warty skin, thinly interspersed with black hairs; these become more thickly set towards the base of the bill; the hind-head is of an ash colour; the rest of the plumage, pure white, the primaries excepted, which are black; from the root of each wing rise numerous large flowing feathers projecting over the tail and tips of the wings; the uppermost of these are broad, drooping, and pointed at the extremities, some of them are also loosely webbed, their silky fibres curling inwards, like those of the ostrich. They seem to occupy the place of the tertials. The legs and naked part of the thighs are black, very thick and strong; the hind toe seems rarely or never to reach the hard ground, though it may probably assist in preventing the bird from sinking too deep in the mire.

GENUS XLV — *ARDEA*, LINNÆUS.SUBGENUS I. — *ARDEA*.202. *ARDEA HERODIAS*, LINN. AND WILSON. — GREAT HERON.

WILSON, PLATE LXV. FIG. II.

THE history of this large and elegant bird having been long involved in error and obscurity,* I have taken more than common pains to present a faithful description of it, and every fact and authentic particular relative to its manners, which may be necessary to the elucidation of the subject.

The great heron is a constant inhabitant of the Atlantic coast, from New York to Florida; in deep swamps and severe weather seeking the open springs of the cedar and cypress swamps, and the muddy inlets occasionally covered by the tides. On the higher inland parts of the country, beyond the mountains, they are less numerous; and one which was shot in the upper parts of New Hampshire, was described to me as a great curiosity. Many of their breeding places occur in both Carolinas, chiefly in the vicinity of the sea. In the lower parts of New Jersey, they have also their favourite places for building, and rearing their young. These are generally in the gloomy solitudes of the tallest cedar swamps, where, if unmolested, they continue annually to breed for many years. These swamps are from half a mile to a mile in breadth, and sometimes five or six in length, and appear as if they occupied the former channel of some choked up river, stream, lake, or arm

* Latham says of this species, that "all the upper parts of the body, the belly, tail, and legs, are brown;" and this description has been repeated by every subsequent compiler. Buffon, with his usual eloquent absurdity, describes the heron as "exhibiting the picture of wretchedness, anxiety, and indigence; condemned to struggle perpetually with misery and want; sickened with the restless cravings of a famished appetite;" a description so ridiculously untrue, that, were it possible for these birds to comprehend it, it would excite the risibility of the whole tribe.

of the sea. The appearance they present to a stranger is singular. A front of tall and perfectly straight trunks, rising to the height of fifty or sixty feet without a limb, and crowded in every direction, their tops so closely woven together as to shut out the day, spreading the gloom of a perpetual twilight below. On a nearer approach, they are found to rise out of the water, which, from the impregnation of the fallen leaves and roots of the cedars, is of the colour of brandy. Amidst this bottom of congregated springs, the ruins of the former forest lie piled in every state of confusion. The roots, prostrate logs, and, in many places, the water, are covered with green mantling moss, while an undergrowth of laurel, fifteen or twenty feet high, intersects every opening so completely, as to render a passage through laborious and harassing beyond description; at every step, you either sink to the knees, clamber over fallen timber, squeeze yourself through between the stubborn laurels, or plunge to the middle in ponds made by the uprooting of large trees, and which the green moss concealed from observation. In calm weather, the silence of death reigns in these dreary regions; a few interrupted rays of light shoot across the gloom; and unless for the occasional hollow screams of the herons, and the melancholy chirping of one or two species of small birds, all is silence, solitude, and desolation. When a breeze rises, at first it sighs mournfully through the tops; but as the gale increases, the tall mast-like cedars wave like fishing poles, and rubbing against each other, produce a variety of singular noises, that, with the help of a little imagination, resemble shrieks, groans, growling of bears, wolves, and such like comfortable music.

On the tops of the tallest of these cedars the herons construct their nests, ten or fifteen pair sometimes occupying a particular part of the swamp. The nests are large, formed of sticks, and lined with smaller twigs; each occupies the top of a single tree. The eggs are generally four, of an oblong pointed form, larger than those of a hen, and of a light greenish blue, without

any spots. The young are produced about the middle of May, and remain on the trees until they are full as heavy as the old ones, being extremely fat, before they are able to fly. They breed but once in the season. If disturbed in their breeding place, the old birds fly occasionally over the spot, sometimes honking like a goose, sometimes uttering a coarse hollow grunting noise, like that of a hog, but much louder.

The great heron is said to be fat at the full moon, and lean at its decrease; this might be accounted for by the fact of their fishing regularly by moonlight through the greater part of the night, as well as during the day; but the observation is not universal, for at such times I have found some lean, as well as others fat. The young are said to be excellent for the table, and even the old birds, when in good order, and properly cooked, are esteemed by many.

The principal food of the great heron is fish, for which he watches with the most unwearied patience, and seizes them with surprising dexterity. At the edge of the river, pond, or sea shore, he stands fixed and motionless, sometimes for hours together. But his stroke is as quick as thought, and sure as fate, to the first luckless fish that approaches within his reach; these he sometimes beats to death, and always swallows head foremost, such being their uniform position in the stomach. He is also an excellent mouser, and of great service to our meadows, in destroying the short-tailed or meadow mouse, so injurious to the banks. He also feeds eagerly on grasshoppers, various winged insects, particularly dragon flies, which he is very expert at striking, and also eats the seeds of that species of nymphæ usually called splatterdocks, so abundant along our fresh water ponds and rivers.

The heron has great powers of wing, flying sometimes very high, and to a great distance; his neck doubled, his head drawn in, and his long legs stretched out in a right line behind him, appearing like a tail, and, probably, serving the same rudder-like office. When he leaves the sea coast, and traces, on wing, the courses

of the creeks or rivers upwards, he is said to prognosticate rain; when downwards, dry weather. He is most jealously vigilant and watchful of man, so that those who wish to succeed in shooting the heron, must approach him entirely unseen, and by stratagem. The same inducements, however, for his destruction, do not prevail here as in Europe. Our sea shores and rivers are free to all for the amusement of fishing. Luxury has not yet constructed her thousands of fish ponds, and surrounded them with steel traps, spring guns, and heron snares.* In our vast fens, meadows, and sea marshes, this stately bird roams at pleasure, feasting on the never failing magazines of frogs, fish, seeds, and insects, with which they abound, and of which he, probably, considers himself the sole lord and proprietor. I have several times seen the bald eagle attack and tease the great heron; but whether for sport, or to make him disgorge his fish, I am uncertain.

— The common heron of Europe (*ardea major*) very much resembles the present, which might, as usual,

* “ The heron,” says an English writer, “ is a very great devourer of fish, and does more mischief in a pond than an otter. People who have kept herons, have had the curiosity to number the fish they feed them with into a tub of water, and counting them again afterwards, it has been found that they will eat up fifty moderate dace and roaches in a day. It has been found, that in carp ponds visited by this bird, one heron will eat up a thousand store carp in a year; and will hunt them so close, as to let very few escape. The readiest method of destroying this mischievous bird, is by fishing for him in the manner of pike, with a baited hook. When the haunt of the heron is found out, three or four small roach, or dace, are to be procured, and each of them is to be baited on a wire, with a strong hook at the end, entering the wire just at the gills, and letting it run just under the skin to the tail; the fish will live in this manner for five or six days, which is a very essential thing; for if it be dead, the heron will not touch it. A strong line is then to be prepared of silk and wire twisted together, and is to be about two yards long; tie this to the wire that holds the hook, and to the other end of it there is to be tied a stone of about a pound weight; let three or four of these baits be sunk in different shallow parts of the pond, and, in a night or two's time, the heron will not fail to be taken with one or other of them.”

have probably been ranked as the original stock, of which the present was a mere degenerated species, were it not that the American is greatly superior, in size and weight, to the European species, the former measuring four feet four inches, and weighing upwards of seven pounds; the latter, three feet three inches, and rarely weighing more than four pounds. Yet, with the exception of size, and the rust coloured thighs of the present, they are extremely alike. The common heron of Europe, however, is not an inhabitant of the United States.

The great heron does not receive his full plumage during the first season, nor until the summer of the second. In the first season, the young birds are entirely destitute of the white plumage of the crown, and the long pointed feathers of the back, shoulders, and breast. In this dress I have frequently shot them in autumn. But in the third year, both males and females have assumed their complete dress, and, contrary to all the European accounts which I have met with, both are then so nearly alike in colour and markings, as scarcely to be distinguished from each other, both having the long flowing crest, and all the ornamental white pointed plumage of the back and breast. Indeed, this sameness in the plumage of the males and females, when arrived at their perfect state, is a characteristic of the whole of the genus with which I am acquainted. Whether it be different with those of Europe, or that the young and imperfect birds have been hitherto mistaken for females, I will not pretend to say, though I think the latter conjecture highly probable, as the night raven (*ardea nycticorax*) has been known in Europe for several centuries, and yet, in all their accounts, the sameness of the colours and plumage of the male and female of that bird, is nowhere mentioned; on the contrary, the young or yearling bird has been universally described as the female.

On the 18th of May I examined, both externally and by dissection, five specimens of the great heron, all in complete plumage, killed in a cedar swamp near the

head of Tuckahoe river, in Cape May county, New Jersey. In this case, the females could not be mistaken, as some of the eggs were nearly ready for exclusion.

Length of the great heron, four feet four inches from the point of the bill to the end of the tail; and to the bottom of the feet, five feet four inches; extent, six feet; bill, eight inches long, and one inch and a quarter in width, of a yellow colour, in some blackish on the ridge, extremely sharp at the point, the edges also sharp, and slightly serrated near the extremity; space round the eye, from the nostril, a light purplish blue; irides, orange, brightening into yellow where they join the pupil; forehead and middle of the crown, white, passing over the eye; sides of the crown and hindhead, deep slate, or bluish black, and elegantly crested, the two long, tapering, black feathers, being full eight inches in length; chin, cheeks, and sides of the head, white for several inches; throat, white, thickly streaked with double rows of black; rest of the neck, brownish ash, from the lower part of which shoot a great number of long, narrow pointed, white feathers, that spread over the breast, and reach nearly to the thighs; under these long plumes, the breast itself, and middle of the belly, are of a deep blackish slate, the latter streaked with white; sides, blue ash; vent, white; thighs and ridges of the wings, a dark purplish rust colour; whole upper parts of the wings, tail, and body, a fine light ash, the latter ornamented with a profusion of long, narrow, white, tapering feathers, originating on the shoulders or upper part of the back, and falling gracefully over the wings; primaries, very dark slate, nearly black; naked thighs, brownish yellow; legs, brownish black, tinctured with yellow, and netted with seams of whitish; in some, the legs are nearly black. Little difference could be perceived between the plumage of the males and females; the latter were rather less, and the long pointed plumes of the back were not quite so abundant.

The young birds of the first year have the whole upper part of the head of a dark slate; want the long

plumes of the breast and back ; and have the body, neck, and lesser coverts of the wings, considerably tinged with ferruginous.

On dissection, the gullet was found of great width, from the mouth to the stomach, which has not the two strong muscular coats that form the gizzard of some birds ; it was more loose, of considerable and uniform thickness throughout, and capable of containing nearly a pint ; it was entirely filled with fish, among which were some small eels, all placed head downwards ; the intestines measured nine feet in length, were scarcely as thick as a goose-quill, and incapable of being distended ; so that the vulgar story of the heron swallowing eels, which, passing suddenly through him, are repeatedly swallowed, is absurd and impossible. On the external coat of the stomach of one of these birds, opened soon after being shot, something like a blood-vessel lay in several meandering folds, enveloped in a membrane, and closely adhering to the surface. On carefully opening this membrane, it was found to contain a large, round, living worm, eight inches in length ; another, of like length, was found coiled, in the same manner, on another part of the external coat. It may also be worthy of notice, that the intestines of the young birds of the first season, killed in the month of October, when they were nearly as large as the others, measured only six feet four or five inches ; those of the full grown ones, from eight to nine feet in length.

203. *ARDEA ALBA*, LINNÆUS. — *ARDEA EGRETTA*, WILSON.

GREAT WHITE HERON.

WILSON, PLATE LXI. FIG. IV.

THIS tall and elegant bird, though often seen, during the summer, in our low marshes and inundated meadows, yet, on account of its extreme vigilance and watchful timidity, is very difficult to be procured. Its principal residence is in the regions of the south, being found from Guiana, and probably beyond the line, to New

York. It enters the territories of the United States late in February; this I conjecture from having first met with it in the southern parts of Georgia about that time. The high inland parts of the country it rarely or never visits; its favourite haunts are vast inundated swamps, rice fields, the low marshy shores of rivers, and such like places; where, from its size and colour, it is very conspicuous, even at a great distance.

The appearance of this bird, during the first season, when it is entirely destitute of the long flowing plumes of the back, is so different from the same bird in its perfect plumage, which it obtains in the third year, that naturalists and others very generally consider them as two distinct species. The opportunities which I have fortunately had of observing them with the train in various stages of its progress, from its first appearance to its full growth, satisfies me that the great white heron with, and that without, the long plumes, are one and the same species, in different periods of age. In the museum of my friend, Mr Peale, there is a specimen of this bird, in which the train is wanting; but on a closer examination, its rudiments are plainly to be perceived, extending several inches beyond the common plumage.

The great white heron breeds in several of the extensive cedar swamps in the lower parts of New Jersey. Their nests are built on the trees, in societies; the structure and materials exactly similar to those of the snowy heron, but larger. The eggs are usually four, of a pale blue colour. In the months of July and August the young make their first appearance in the meadows and marshes, in parties of twenty or thirty together. The large ditches with which the extensive meadows below Philadelphia are intersected, are regularly, about that season, visited by flocks of those birds; these are frequently shot, but the old ones are too sagacious to be easily approached. Their food consists of frogs, lizards, small fish, insects, seeds of the splatterdock, (a species of *nympha*;) and small water snakes. They will also devour mice and moles, the

remains of such having been at different times found in their stomachs.

The long plumes of these birds have at various periods been in great request on the continent of Europe, particularly in France and Italy, for the purpose of ornamenting the female head-dress. When dyed of various colours, and tastefully fashioned, they form a light and elegant duster and mosquito brush. The Indians prize them for ornamenting their hair, or top-knot; and I have occasionally observed these people wandering through the market-place of New Orleans with bunches of those feathers for sale.

The great white heron measures five feet from the extremities of the wings, and three feet six inches from the tip of the bill to the end of the tail; the train extends seven or eight inches farther. This train is composed of a great number of long, thick, tapering shafts, arising from the lower part of the shoulders, and thinly furnished on each side with fine flowing hair-like threads, of several inches in length, covering the lower part of the back, and falling gracefully over the tail, which it entirely conceals. The whole plumage is of a snowy whiteness, except the train, which is slightly tinged with yellow. The bill is nearly six inches in length, of a rich orange yellow, tipped with black; irides, a paler orange; pupil, small, giving the bird a sharp and piercing aspect; the legs are long, stout, and of a black colour, as is the bare space of four inches above the knee; the span of the foot measures upwards of six inches; the inner edge of the middle claw is pectinated; the exterior and middle toes are united at the base, for about half an inch, by a membrane.

The articulations of the vertebræ are remarkably long; the intestines measure upwards of eight feet, and are very narrow. The male and female are alike in plumage; both, when of full age, having the train equally long.

204. *ARDEA CANDIDISSIMA*, GMELIN AND WILSON.

SNOWY HERON.

WILSON, PLATE LXII. FIG. IV.

THIS elegant species inhabits the sea coast of North America, from the Isthmus of Darien to the Gulf of St Lawrence, and is, in the United States, a bird of passage; arriving from the south early in April, and leaving the middle States again in October. Its general appearance, resembling so much that of the little egret of Europe, has, I doubt not, imposed on some of the naturalists of that country, as I confess it did on me.* From a more careful comparison, however, of both birds, I am satisfied that they are two entirely different and distinct species. These differences consist in the large flowing crest, yellow feet, and singularly curled plumes of the back of the present; it is also nearly double the size of the European species.

The snowy heron seems particularly fond of the salt marshes during summer, seldom penetrating far inland. Its white plumage renders it a very conspicuous object, either while on wing, or while wading the meadows or marshes. Its food consists of those small crabs usually called *fiddlers*, mud worms, snails, frogs, and lizards. It also feeds on the seeds of some species of nymphæ, and of several other aquatic plants.

On the 19th of May I visited an extensive breeding place of the snowy heron, among the red cedars of Summers's Beach, on the coast of Cape May. The situation was very sequestered, bounded on the land side by a fresh water marsh or pond, and sheltered from the Atlantic by ranges of sand hills. The cedars, though not high, were so closely crowded together as to render it difficult to penetrate through among them. Some trees contained three, others four nests, built

* "On the American continent the little egret is met with at New York and Long Island."—LATHAM, vol. iii, p. 90.

wholly of sticks. Each had in it three eggs, of a pale greenish blue colour, and measuring an inch and three quarters in length, by an inch and a quarter in thickness. Forty or fifty of these eggs were cooked, and found to be well tasted; the white was of a bluish tint, and almost transparent, though boiled for a considerable time; the yolk very small in quantity. The birds rose in vast numbers, but without clamour, alighting on the tops of the trees around, and watching the result in silent anxiety. Among them were numbers of the night heron, and two or three purple-headed herons. Great quantities of egg shells lay scattered under the trees, occasioned by the depredations of the crows, who were continually hovering about the place. On one of the nests I found the dead body of the bird itself, half devoured by the hawks, crows, or gulls. She had probably perished in defence of her eggs.

The snowy heron is seen at all times during summer among the salt marshes, watching and searching for food, or passing, sometimes in flocks, from one part of the bay to the other. They often make excursions up the rivers and inlets, but return regularly in the evening to the red cedars on the beach to roost. I found these birds on the Mississippi, early in June, as far up as Fort Adams, roaming about among the creeks and inundated woods.

The length of this species is two feet one inch; extent, three feet two inches; the bill is four inches and a quarter long, and grooved; the space from the nostril to the eye, orange yellow, the rest of the bill black; irides, vivid orange; the whole plumage is of a snowy whiteness; the head is largely crested with loose unwebbed feathers, nearly four inches in length; another tuft of the same covers the breast; but the most distinguished ornament of this bird is a bunch of long silky plumes, proceeding from the shoulders, covering the whole back, and extending beyond the tail, the shafts of these are six or seven inches long, extremely elastic, tapering to the extremities, and thinly set with long, slender, bending threads or fibres, easily agitated

by the slightest motion of the air; these shafts curl upwards at the ends. When the bird is irritated, and erects those airy plumes, they have a very elegant appearance: the legs and naked part of the thighs are black; the feet, bright yellow; claws, black, the middle one pectinated.

The female can scarcely be distinguished by her plumage, having not only the crest, but all the ornaments of the male, though not quite so long and flowing.

The young birds of the first season are entirely destitute of the long plumes of the breast and back; but, as all those that have been examined in spring are found crested and ornamented as above, they doubtless receive their full dress on the first moulting. Those shot in October measured twenty-two inches in length, by thirty-four in extent; the crest was beginning to form; the legs, yellowish green, daubed with black; the feet, greenish yellow; the lower mandible white at the base; the wings, when shut, nearly of a length with the tail, which is even at the end.

The little egret, or European species, is said by Latham and Turton to be nearly a foot in length; Bewick observes, that it rarely exceeds a foot and a half; has a much shorter crest, with two long feathers; the feet are black; and the long plumage of the back, instead of turning up at the extremity, falls over the rump.

The young of both these birds are generally very fat, and esteemed by some people as excellent eating.

205. *ARDEA LUDOVICIANA*, WILSON. — LOUISIANA HERON.

WILSON, PLATE LXIV. FIG. I. — EDINBURGH COLLEGE MUSEUM.

THIS is a rare and delicately formed species, occasionally found on the swampy river shores of South Carolina, but more frequently along the borders of the Mississippi, particularly below New Orleans. In each of these places it is migratory; and in the latter, as I

have been informed, builds its nest on trees, amidst the inundated woods. Its manners correspond very much with those of the blue heron. It is quick in all its motions, darting about after its prey with surprising agility. Small fish, frogs, lizards, tadpoles, and various aquatic insects, constitute its principal food.

There is a bird described by Latham in his *General Synopsis*, vol. iii, p. 88, called the demi egret,* which, from the account there given, seems to approach near to the present species. It is said to inhabit Cayenne.

Length of the Louisiana heron, from the point of the bill to the extremity of the tail, twenty-three inches; the long hair-like plumage of the rump and lower part of the back extends several inches farther; the bill is remarkably long, measuring full five inches, of a yellowish green at the base, black towards the point, and very sharp; irides, yellow; chin and throat, white, dotted with ferruginous and some blue; the rest of the neck is of a light vinous purple, intermixed on the lower part next the breast with dark slate coloured plumage; the whole feathers of the neck are long, narrow, and pointed; head, crested, consisting first of a number of long, narrow, purple feathers, and under these seven or eight pendent ones, of a pure white, and twice the length of the former; upper part of the back and wings, light slate; lower part of the back and rump, white, but concealed by a mass of long unwebbed hair-like plumage, that falls over the tail and tips of the wings, extending three inches beyond them; these plumes are of a dirty purplish brown at the base, and lighten towards the extremities to a pale cream colour; the tail is even at the tip, rather longer than the wings, and of a fine slate; the legs and naked thighs, greenish yellow; middle claw, pectinated; whole lower parts, pure white. Male and female alike in plumage, both being crested.

* See also BUFFON, vol. vii, p. 378.

SUBGENUS II. — *NOTAURUS*.206. *ARDEA NYCTICORAX*, LINNÆUS AND WILSON.

NIGHT HERON, OR QUA BIRD.

WILSON, PLATE LXI. FIG. II. ADULT. — FIG. III. YOUNG.

EDINBURGH COLLEGE MUSEUM.

THIS species, though common to both continents, and known in Europe for many centuries, has been so erroneously described by all the European naturalists whose works I have examined, as to require more than common notice in this place. For this purpose, an accurate detail is given of so much of their history as I am personally acquainted with.

The night heron arrives in Pennsylvania early in April, and immediately takes possession of his former breeding place, which is usually the most solitary and deeply shaded part of a cedar swamp. Groves of swamp oak, in retired and inundated places, are also sometimes chosen, and the males not unfrequently select tall woods, on the banks of the river, to roost in during the day. These last regularly direct their course, about the beginning of evening twilight, towards the marshes, uttering, in a hoarse and hollow tone, the sound *Qua*, which by some has been compared to that produced by the retchings of a person attempting to vomit. At this hour, also, all the nurseries in the swamps are emptied of their inhabitants, who disperse about the marshes, and along the ditches and river shore, in quest of food. Some of these breeding places have been occupied every spring and summer for time immemorial, by from eighty to one hundred pair of qua birds. In places where the cedars have been cut down for sale, the birds have merely removed to another quarter of the swamp; but when personally attacked, long teased, and plundered, they have been known to remove from an ancient breeding place, in a body, no one knew where. Such was the case with one on the

Delaware, near Thompson's Point, ten or twelve miles below Philadelphia; which having been repeatedly attacked and plundered by a body of crows, after many severe rencounters, the herons finally abandoned the place. Several of these breeding places occur among the red cedars on the sea beach of Cape May, intermixed with those of the little egret, green bittern, and blue heron. The nests are built entirely of sticks, in considerable quantities, with frequently three and four nests on the same tree. The eggs are generally four in number, measuring two inches and a quarter in length, by one and three quarters in thickness, and of a very pale light blue colour. The ground or marsh below is bespattered with their excrements lying all around like whitewash, with feathers, broken egg shells, old nests, and frequently small fish, which they have dropt by accident, and neglected to pick up.

On entering the swamp in the neighbourhood of one of these breeding places, the noise of the old and the young would almost induce one to suppose that two or three hundred Indians were choking or throttling each other. The instant an intruder is discovered, the whole rise in the air in silence, and remove to the tops of the trees in another part of the woods, while parties of from eight to ten make occasional circuits over the spot to see what is going on. When the young are able, they climb to the highest part of the trees; but, knowing their inability, do not attempt to fly. Though it is probable that these nocturnal birds do not see well during the day, yet their faculty of hearing must be exquisite, as it is almost impossible, with all the precautions one can use, to penetrate near their residence without being discovered. Several species of hawks hover around, making an occasional sweep among the young; and the bald eagle himself has been seen reconnoitring near the spot, probably with the same design.

Contrary to the generally received opinion, the males and females of these birds are so alike in colour, as scarcely to be distinguished from each other; both have

also the long slender plumes that flow from the head. These facts I have exhibited by dissection on several subjects, to different literary gentlemen of my acquaintance, particularly to my venerable friend, Mr William Bartram, to whom I have also often shewn the young. One of these last, which was kept for some time in the botanic garden of that gentleman, by its voice instantly betrayed its origin, to the satisfaction of all who examined it. These young certainly receive their full coloured plumage before the succeeding spring, as, on their first arrival, no birds are to be seen in the dress of the young bird ; but, soon after they have bred, these become more numerous than the others. Early in October they migrate to the south. According to Buffon, these birds also inhabit Cayenne, and are found widely dispersed over Europe, Asia, and America. The European species, however, is certainly much smaller than the American, though in other respects corresponding exactly to it. Among a great number which I examined with attention, the following description was carefully taken from a common sized full grown male.

Length of the night heron, two feet four inches ; extent, four feet ; bill, black, four inches and a quarter long from the corners of the mouth to the tip ; lores, or space between the eye and bill, a bare bluish white skin ; eyelids also large and bare, of a deep purple blue ; eye three-quarters of an inch in diameter ; the iris of a brilliant blood red ; pupil, black ; crested crown and hindhead, deep dark blue, glossed with green ; front and line over the eye, white ; from the hindhead proceed three very narrow, white, tapering feathers, between eight and nine inches in length ; the vanes of these are concave below, the upper one enclosing the next, and that again the lower ; though separated by the hand, if the plumage be again shook several times, these long flowing plumes gradually enclose each other, appearing as one ; these the bird has the habit of erecting when angry or alarmed : the cheeks, neck, and whole lower parts, are white, tintured with yellowish

cream, and under the wings with very pale ash ; back and scapulars, of the same deep dark blue, glossed with green, as that of the crown ; rump and tail-coverts, as well as the whole wings and tail, very pale ash ; legs and feet, a pale yellow cream colour ; inside of the middle claw, serrated.

The female differed in nothing as to plumage from the male, but in the wings being of rather a deeper ash, having not only the dark deep green blue crown and back, but also the long pendent white plumes from the hindhead. Each of the females contained a large cluster of eggs of various sizes.

The young bird was shot soon after it had left the nest, and differed very little from those which had been taken from the trees, except in being somewhat larger. This measured twenty-one inches in length, and three feet in extent ; the general colour above, a very deep brown, streaked with reddish white, the spots of white on the back and wings being triangular, from the centre of the feather to the tip ; quills, deep dusky, marked on the tips with a spot of white ; eye, vivid orange ; belly, white, streaked with dusky, the feathers being pale dusky, streaked down their centres with white ; legs and feet, light green ; inside of the middle claw slightly pectinated ; body and wings, exceedingly thin and limber ; the down still stuck in slight tufts to the tips of some of the feathers.

These birds also breed in great numbers in the neighbourhood of New Orleans ; for, being in that city in the month of June, I frequently observed the Indians sitting in market with the dead and living young birds for sale ; also numbers of gray owls, (*strix nebulosa*,) and the white ibis, (*tantalus albus*,) for which nice dainties I observed they generally found purchasers.

The food of the night heron, or qua bird, is chiefly composed of small fish, which it takes by night. Those that I opened had a large expansion of the gullet immediately under the bill, that narrowed from thence to the stomach, which is a large oblong pouch, and was filled with fish. The teeth of the pectinated claw were

thirty-five or forty in number, and, as they contained particles of the down of the bird, shewed evidently from this circumstance that they act the part of a comb, to rid the bird of vermin in those parts which it cannot reach with its bill.

207. *ARDEA VIOLACEA*, LINNÆUS AND WILSON.

YELLOW-CROWNED HERON.

WILSON, PLATE LXV. FIG. I.

THIS is one of the nocturnal species of the heron tribe, whose manners, place, and mode of building its nest, resemble greatly those of the common night heron, (*ardea nycticorax*;) the form of its bill is also similar. The very imperfect figure and description of this species by Catesby seem to have led the greater part of European ornithologists astray, who appear to have copied their accounts from that erroneous source, otherwise it is difficult to conceive why they should either have given it the name of yellow-crowned, or have described it as being only fifteen inches in length; since the crown of the perfect bird is pure white, and the whole length very near two feet. The name, however, erroneous as it is, has been retained in the present account, for the purpose of more particularly pointing out its absurdity, and designating the species.

This bird inhabits the lower parts of South Carolina, Georgia, and Louisiana, in the summer season; reposing during the day among low, swampy woods, and feeding only in the night. It builds in societies, making its nest with sticks, among the branches of low trees, and lays four pale blue eggs. This species is not numerous in Carolina, which, with its solitary mode of life, makes this bird but little known there. It abounds on the Bahama Islands, where it also breeds; and great numbers of the young, as we are told, are yearly taken for the table, being accounted in that quarter excellent eating. This bird also extends its migrations into Virginia, and even farther north: one of them having been

shot a few years ago on the borders of Schuylkill below Philadelphia.

The food of this species consists of small fish, crabs, and lizards, particularly the former; it also appears to have a strong attachment to the neighbourhood of the ocean.

The yellow-crowned heron is twenty-two inches in length, from the point of the bill to the end of the tail; the long flowing plumes of the back extend four inches farther; breadth, from tip to tip of the expanded wings, thirty-four inches; bill, black, stout, and about four inches in length, the upper mandible grooved exactly like that of the common night heron; lores, pale green; irides, fiery red; head and part of the neck, black, marked on each cheek with an oblong spot of white; crested crown and upper part of the head, white, ending in two long narrow tapering plumes of pure white, more than seven inches long; under these are a few others of a blackish colour; rest of the neck and whole lower parts, fine ash, somewhat whitish on that part of the neck where it joins the black; upper parts, a dark ash, each feather streaked broadly down the centre with black, and bordered with white; wing-quills, deep slate, edged finely with white; tail, even at the end, and of the same ash colour; wing-coverts, deep slate, broadly edged with pale cream; from each shoulder proceed a number of long loosely webbed tapering feathers, of an ash colour, streaked broadly down the middle with black, and extending four inches or more beyond the tips of the wings; legs and feet, yellow; middle claw, pectinated. Male and female, as in the common night heron, alike in plumage.

I strongly suspect that the species called by naturalists the Cayenne night heron (*Ardea Cayanensis*), is nothing more than the present, with which, according to their descriptions, it seems to agree almost exactly.

208. *ARDEA CERULEA*, LINNÆUS AND WILSON.

BLUE CRANE, OR HERON.

WILSON, PLATE LXII. FIG. III. — EDINBURGH COLLEGE MUSEUM.

In mentioning this species in his translation of the *Systema Naturæ*, Turton has introduced what he calls two varieties, one from New Zealand, the other from Brazil; both of which, if we may judge by their size and colour, appear to be entirely different and distinct species; the first being green, with yellow legs, the last nearly one half less than the present. By this loose mode of discrimination, the precision of science being altogether dispensed with, the whole tribe of cranes, herons, and bitterns, may be styled mere varieties of the genus *ardea*. The same writer has still farther increased this confusion, by designating as a different species his bluish heron, (*A. carulescens*), which agrees almost exactly with the present. Some of these mistakes may probably have originated from the figure of this bird given by Catesby, which appears to have been drawn and coloured, not from nature, but from the glimmering recollections of memory, and is extremely erroneous. These remarks are due to truth, and necessary to the elucidation of the history of this species, which seems to be but imperfectly known in Europe.

The blue heron is properly a native of the warmer climates of the United States, migrating from thence, at the approach of winter, to the tropical regions, being found in Cayenne, Jamaica, and Mexico. On the muddy shores of the Mississippi, from Baton Rouge downwards to New Orleans, these birds are frequently met with. In spring they extend their migrations as far north as New England, chiefly in the vicinity of the sea, becoming more rare as they advance to the north. On the sea beach of Cape May, I found a few of them breeding among the cedars, in company with the snowy heron, night heron, and green bittern. The description of the present was taken from two of these,

shot in the month of May, while in complete plumage. Their nests were composed of small sticks, built in the tops of the red cedars, and contained five eggs, of a light blue colour, and of somewhat a deeper tint than those of the night heron. Little or no difference could be perceived between the colours and markings of the male and female. This remark is applicable to almost the whole genus; though, from the circumstance of many of the yearling birds differing in plumage, they have been mistaken for females.

The blue heron, though in the Northern States it be found chiefly in the neighbourhood of the ocean, probably on account of the greater temperature of the climate, is yet particularly fond of fresh water bogs, on the edges of the salt marsh. These it often frequents, wading about in search of tadpoles, lizards, various larvæ of winged insects, and mud worms. It moves actively about in search of these, sometimes making a run at its prey; and is often seen in company with the snowy heron. Like this last, it is also very silent, intent, and watchful.

The genus *ardea* is the most numerous of all the wading tribes, there being no less than ninety-six different species enumerated by late writers. These are again subdivided into particular families, each distinguished by a certain peculiarity. The cranes, by having the head bald; the storks, with the orbits naked; and the herons, with the middle claw pectinated. To this last belong the bitterns. Several of these are nocturnal birds, feeding only as the evening twilight commences, and reposing either among the long grass and reeds, or on tall trees, in sequestered places, during the day. What is very remarkable, these night wanderers often associate, during the breeding season, with the others, building their nests on the branches of the same tree; and, though differing so little in external form, feeding on nearly the same food, living and lodging in the same place, yet preserve their race, language, and manners, as perfectly distinct from those

of their neighbours, as if each inhabited a separate quarter of the globe.

The blue heron is twenty-three inches in length, and three feet in extent; the bill is black, but from the nostril to the eye, in both mandibles, is of a rich light purplish blue; iris of the eye, gray; pupil, black, surrounded by a narrow silvery ring; eyelid, light blue; the whole head, and greater part of the neck, are of a deep purplish brown; from the crested hindhead shoot three narrow pointed feathers that reach nearly six inches beyond the eye; lower part of the neck, breast, belly, and whole body, a deep slate colour, with lighter reflections; the back is covered with long, flat, and narrow feathers, some of which are ten inches long, and extend four inches beyond the tail; the breast is also ornamented with a number of these long slender feathers; legs, blackish green; inner side of the middle claw pectinated. The breast and sides of the rump, under the plumage, are clothed with a mass of yellowish white unelastic cottony down, similar to that in most of the tribe, the uses of which are not altogether understood. Male and female alike in colour.

The young birds of the first year are destitute of the purple plumage on the head and neck.

209. *ARDEA MINOR*, WILSON. — AMERICAN BITTERN.

WILSON, PLATE LXV. FIG. III.

THIS is another nocturnal species, common to all our sea and river marshes, though nowhere numerous; it rests all day among the reeds and rushes, and, unless disturbed, flies and feeds only during the night. In some places it is called the Indian hen; on the sea coast of New Jersey it is known by the name of *dunkadoo*, a word probably imitative of its common note. They are also found in the interior, having myself killed one at the inlet of the Seneca lake, in October. It utters, at times, a hollow guttural note among the reeds, but has nothing of that loud booming

sound for which the European bittern is so remarkable. This circumstance, with its great inferiority of size, and difference of marking, sufficiently prove them to be two distinct species, although, hitherto, the present has been classed as a mere variety of the European bittern. These birds, we are informed, visit Severn river, at Hudson's Bay, about the beginning of June; make their nests in swamps, laying four cinereous green eggs among the long grass. The young are said to be, at first, black.

These birds, when disturbed, rise with a hollow *kwa*, and are then easily shot down, as they fly heavily. Like other night birds, their sight is most acute during the evening twilight; but their hearing is, at all times, exquisite.

The American bittern is twenty-seven inches long, and three feet four inches in extent; from the point of the bill to the extremity of the toes, it measures three feet; the bill is four inches long; the upper mandible, black: the lower, greenish yellow; lores and eyelids, yellow; irides, bright yellow; upper part of the head, flat, and remarkably depressed; the plumage there is of a deep blackish brown, long behind and on the neck, the general colour of which is a yellowish brown shaded with darker; this long plumage of the neck the bird can throw forward at will, when irritated, so as to give him a more formidable appearance; throat, whitish, streaked with deep brown; from the posterior and lower part of the auriculars, a broad patch of deep black passes diagonally across the neck, a distinguished characteristic of this species; the back is deep brown, barred and mottled with innumerable specks and streaks of brownish yellow; quills, black, with a leaden gloss, and tipped with yellowish brown; legs and feet, yellow, tinged with pale green; middle claw, pectinated; belly, light yellowish brown, streaked with darker; vent, plain; thighs, sprinkled on the outside with grains of dark brown; male and female, nearly alike, the latter somewhat less. According to Bewick, the tail of the European bittern contains only ten feathers; the Ame-

rican species has, invariably, twelve. The intestines measured five feet six inches in length, and were very little thicker than a common knitting needle; the stomach is usually filled with fish or frogs.

This bird, when fat, is considered by many to be excellent eating.

210. *ARDEA FIRESCENS*, LINN. AND WILSON. — GREEN HERON.

WILSON, PLATE LXI. FIG. I. — EDINBURGH COLLEGE MUSEUM.

THIS common and familiar species owes little to the liberality of public opinion, whose prejudices have stigmatized it with a very vulgar and indelicate nickname; and treat it, on all occasions, as worthless and contemptible. Yet few birds are more independent of man than this; for it fares best, and is always most numerous, where cultivation is least known or attended to; its favourite residence being the watery solitudes of swamps, pools, and morasses, where millions of frogs and lizards "tune their nocturnal notes" in full chorus, undisturbed by the lords of creation.

The green bittern makes its first appearance in Pennsylvania early in April, soon after the marshes are completely thawed. There, among the stagnant ditches with which they are intersected, and amidst the bogs and quagmires, he hunts with great cunning and dexterity. Frogs and small fish are his principal game, whose caution, and facility of escape, require nice address, and rapidity of attack. When on the look-out for small fish, he stands in the water, by the side of the ditch, silent and motionless as a statue; his neck drawn in over his breast, ready for action. The instant a fry or minnow comes within the range of his bill, by a stroke, quick and sure as that of the rattlesnake, he seizes his prey, and swallows it in an instant. He searches for small crabs, and for the various worms and larvæ, particularly those of the dragon fly, which lurk in the mud, with equal adroitness. But the capturing of frogs requires much nicer management. These wary

reptiles shrink into the mire on the least alarm, and do not raise up their heads again to the surface without the most cautious circumspection. The bittern, fixing his penetrating eye on the spot where they disappeared, approaches with slow stealing step, laying his feet so gently and silently on the ground, as not to be heard or felt; and, when arrived within reach, stands fixed, and bending forwards, until the first glimpse of the frog's head makes its appearance, when, with a stroke instantaneous as lightning, he seizes it in his bill, beats it to death, and feasts on it at his leisure.

This mode of life, requiring little fatigue where game is so plenty, as is generally the case in all our marshes, must be particularly pleasing to the bird, and also very interesting, from the continual exercise of cunning and ingenuity necessary to circumvent its prey. Some of the naturalists of Europe, however, in their superior wisdom, think very differently; and one can scarcely refrain from smiling at the absurdity of those writers, who declare, that the lives of this whole class of birds are rendered miserable by toil and hunger; their very appearance, according to Buffon, presenting the image of suffering anxiety and indigence.*

When alarmed, the green bittern rises with a hollow guttural scream; does not fly far, but usually alights on some old stump, tree, or fence adjoining, and looks about with extended neck; though, sometimes, this is drawn in so, that his head seems to rest on his breast. As he walks along the fence, or stands gazing at you with outstretched neck, he has the frequent habit of jetting the tail. He sometimes flies high, with doubled neck, and legs extended behind, flapping the wings smartly, and travelling with great expedition. He is the least shy of all our herons; and, perhaps, the most numerous and generally dispersed, being found far in the interior, as well as along our salt marshes; and every where about the muddy shores of our mill ponds, creeks, and large rivers.

* *Histoire Naturelle des Oiseaux*, tome xxii, p. 343.

The green bittern begins to build about the 20th of April; sometimes in single pairs, in swampy woods; often in companies; and not unfrequently in a kind of association with the quail birds, or night herons. The nest is fixed among the branches of the trees; is constructed wholly of small sticks, lined with finer twigs, and is of considerable size, though loosely put together. The female lays four eggs, of the common oblong form, and of a pale light blue colour. The young do not leave the nest until able to fly; and, for the first season, at least, are destitute of the long pointed plumage on the back; the lower parts are also lighter, and the white on the throat broader. During the whole summer, and until late in autumn, these birds are seen in our meadows and marshes, but never remain during winter in any part of the United States.

The green bittern is eighteen inches long, and twenty-five inches in extent; bill, black, lighter below, and yellow at the base; chin, and narrow streak down the throat, yellowish white; neck, dark vinaceous red; back, covered with very long, tapering, pointed feathers, of a hoary green, shafted with white, on a dark green ground; the hind part of the neck is destitute of plumage, that it may be the more conveniently drawn in over the breast, but is covered with the long feathers of the throat and sides of the neck, that enclose it behind; wings and tail, dark glossy green, tipped and bordered with yellowish white; legs and feet, yellow, tinged before with green, the skin of these thick and movable; belly, ashy brown; irides, bright orange; crested head, very dark glossy green. The female, as I have particularly observed, in numerous instances, differs in nothing, as to colour, from the male; neither of them receive the long feathers on the back during the first season.

There is one circumstance attending this bird, which, I recollect, at first surprised me. On shooting and wounding one, I carried it some distance by the legs, which were at first yellow; but on reaching home, I perceived, to my surprise, that they were red. On

letting the bird remain some time undisturbed, they again became yellow, and I then discovered that the action of the hand had brought a flow of blood into them, and produced the change of colour. I have remarked the same in those of the night heron.

SUBGENUS III. — *ARDEOLA*.

211. *ARDEA EXILIS*, GMELIN AND WILSON. — LEAST BITTERN.

WILSON, PLATE LXV. FIG. IV.

THIS is the smallest known species of the whole tribe. It is commonly found in fresh water meadows, and rarely visits the salt marshes. One shot near Great Egg Harbour was presented to me as a very uncommon bird. In the meadows of Schuylkill and Delaware, below Philadelphia, a few of these birds breed every year; making their nests in the thick tussocks of grass, in swampy places. When alarmed, they seldom fly far, but take shelter among the reeds or long grass. They are scarcely ever seen exposed, but skulk during the day; and, like the American bittern, feed chiefly in the night.

This little creature measures twelve inches in length, and sixteen in extent; the bill is more than two inches and a quarter long, yellow, ridged with black, and very sharp pointed; space round the eye, pale yellow; irides, bright yellow; whole upper part of the crested head, the back, scapulars, and tail, very deep slate, reflecting slight tints of green; throat, white, here and there tinged with buff; hind part of the neck, dark chestnut bay; sides of the neck, cheeks, and line over the eye, brown buff; lesser wing-coverts, the same; greater wing-coverts, chestnut, with a spot of the same at the bend of the wing; the primary coverts are also tipped with the same; wing-quills, dark slate; breast, white, tinged with ochre, under which lie a number of blackish feathers; belly and vent, white; sides, pale ochre; legs, greenish on the shins, hind part and feet, yellow;

thighs, feathered to within a quarter of an inch of the knees; middle claw, pectinated; toes, tinged with pale green; feet, large, the span of the foot measuring two inches and three quarters. Male and female, nearly alike in colour. The young birds are brown on the crown and back. The stomach was filled with small fish; and the intestines, which were extremely slender, measured, in length, about four feet.

The least bittern is also found in Jamaica, and several of the West India islands.

FAMILY XIX.

FALCATI, ILLIGER.

GENUS XLVI.—*TANTALUS*.

212. *TANTALUS LOCULATOR*, LINNÆUS AND WILSON. — WOOD IBIS.

WILSON, PLATE LXVI. FIG. 1. — EDINBURGH COLLEGE MUSEUM.

THE wood ibis inhabits the lower parts of Louisiana, Carolina, and Georgia; is very common in Florida, and extends as far south as Cayenne, Brazil, and various parts of South America. In the United States it is migratory; but has never, to my knowledge, been found to the north of Virginia. Its favourite haunts are watery savannahs and inland swamps, where it feeds on fish and reptiles. The French inhabitants of Louisiana esteem it good eating.

With the particular manners of this species I am not personally acquainted; but the following characteristic traits are given of it by Mr William Bartram, who had the best opportunities of noting them.

“This solitary bird,” he observes, “does not associate in flocks, but is generally seen alone, commonly near the banks of great rivers, in vast marshes or meadows, especially such as are covered by inundations, and also in the vast deserted rice plantations; he stands alone, on the topmost limb of tall dead cypress trees, his neck contracted or drawn in upon his shoulders, and his beak resting like a long scythe upon his breast; in this pensive posture, and solitary situation, they look extremely grave, sorrowful, and melancholy, as if in the deepest thought. They are never seen on the sea coast, and yet are never found at a great distance from it. They feed on serpents, young alligators, frogs, and other reptiles.”*

* *Travels*, &c. p. 150.

A very fine specimen of this bird was sent to me from Georgia by Stephen Elliot, Esq. of Beaufort, South Carolina ; its size and markings were as follow :—

Length, three feet two inches ; bill, nearly nine inches long, straight for half its length, thence curving downwards to the extremity, and full two inches thick at the base, where it rises high in the head, the whole of a brownish horn colour ; the under mandible fits into the upper in its whole length, and both are very sharp edged : face, and naked head, and part of the neck, dull greenish blue, wrinkled ; eye, large, seated high in the head ; irides, dark red ; under the lower jaw is a loose corrugated skin, or pouch, capable of containing about half a pint ; whole body, neck, and lower parts, white ; quills, dark glossy green and purple ; tail, about two inches shorter than the wings, even at the end, and of a deep and rich violet ; legs and naked thighs, dusky green ; feet and toes, yellowish, sprinkled with black ; feet, almost semipalmated, and bordered to the claws with a narrow membrane ; some of the greater wing-coverts are black at the root, and shafted with black ; plumage on the upper ridge of the neck, generally worn with rubbing on the back, while in its common position, of resting its bill on its breast, in the manner of the white ibis.

The female has only the head and chin naked ; both are subject to considerable changes of colour when young, the body being found sometimes blackish above, the belly cinereous, and spots of black on the wing-coverts ; all of which, as the birds advance in age, gradually disappear, and leave the plumage of the body, &c. as has been described.

GENUS XLVII.—*IBIS*, LACEP.213. *IBIS RUBRA*, VIEILL. — *TANTALUS RUBER*, WILSON.

SCARLET IBIS.

WILSON, PLATE LXVI. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THIS beautiful bird is found in the most southern parts of Carolina, also in Georgia and Florida, chiefly about the sea-shore and its vicinity. In most parts of America, within the tropics, and in almost all the West India islands, it is said to be common; also in the Bahamas. Of its manners, little more has been collected, than that it frequents the borders of the sea, and shores of the neighbouring rivers, feeding on small fry, shell fish, sea worms, and small crabs. It is said frequently to perch on trees, sometimes in large flocks; but to lay its eggs on the ground, on a bed of leaves. The eggs are described as being of a greenish colour; the young, when hatched, black; soon after, gray; and before they are able to fly, white; continuing gradually to assume their red colour until the third year, when the scarlet plumage is complete. It is also said that they usually keep in flocks, the young and old birds separately. They have frequently been domesticated.

The scarlet ibis measures twenty-three inches in length, and thirty-seven in extent; the bill is five inches long, thick, and somewhat of a square form at the base, gradually bent downwards, and sharply ridged, of a black colour, except near the base, where it inclines to red; irides, dark hazel; the naked face is finely wrinkled, and of a pale red; chin, also bare and wrinkled for about an inch; whole plumage, a rich glowing scarlet, except about three inches of the extremities of the four outer quill feathers, which are of a deep steel blue; legs and naked part of the thighs, pale red, the three anterior toes united by a membrane as far as the first joint.

Whether the female differs, in the colour of her

plumage, from the male, or what changes both undergo during the first and second years, I am unable to say from personal observation. Being a scarce species with us, and only found on our most remote southern shores, a sufficient number of specimens have not been procured, to enable me to settle this matter with sufficient certainty.

214. *IBIS ALBA*, VIEILL. — *TANTALUS ALBUS*, WILSON.

WHITE IBIS.

WILSON, PLATE LXVI. FIG. III.

THIS species bears in every respect, except that of colour, so strong a resemblance to the preceding, that I have been almost induced to believe it the same, in its white or imperfect stage of colour. The length and form of the bill, the size, conformation, as well as colour of the legs, the general length and breadth, and even the steel blue on the four outer quill-feathers, are exactly alike in both. These suggestions, however, are not made with any certainty of its being the same, but as circumstances which may lead to a more precise examination of the subject hereafter.

I found this species pretty numerous on the borders of Lake Pontchartrain, near New Orleans, in the month of June, and also observed the Indians sitting in market with strings of them for sale. I met with them again on the low keys or islands off the Peninsula of Florida. Mr Bartram observes, that "they fly in large flocks or squadrons, evening and morning, to and from their feeding places or roosts, and are usually called Spanish curlews. They feed chiefly on cray fish, whose cells they probe, and, with their strong pinching bills, drag them out." The low islands above mentioned abound with these creatures and small crabs, the ground in some places seeming alive with them, so that the rattling of their shells against one another was incessant. My venerable friend, in his observations on these birds, adds, "It is a pleasing sight at times of high winds,

and heavy thunder storms, to observe the numerous squadrons of these Spanish curlews, driving to and fro, turning and tacking about high up in the air, when, by their various evolutions in the different and opposite currents of the wind, high in the clouds, their silvery white plumage gleams and sparkles like the brightest crystal, reflecting the sunbeams that dart upon them between the dark clouds."

The white ibis is twenty-three inches long, and thirty-seven inches in extent; bill formed exactly like that of the scarlet species, of a pale red, blackish towards the point; face a reddish flesh colour, and finely wrinkled; irides, whitish; whole plumage pure white, except about four inches of the tips of the four outer quill-feathers, which are of a deep and glossy steel blue; legs and feet pale red, webbed to the first joint.

These birds I frequently observed standing on the dead limbs of trees, and on the shore, resting on one leg, their body in an almost perpendicular position, the head and bill resting on the breast. This appears to be its most common mode of resting, and perhaps sleeping, as, in all those which I examined, the plumage on the upper ridge of the neck and upper part of the back, was evidently worn by this habit. The same is equally observable on the neck and back of the wood ibis.

The present species rarely extends its visits north of Carolina, and even in that State is only seen for a few weeks towards the end of summer. In Florida they are common, but seldom remove to any great distance from the sea.

FAMILY XX.

LIMICOLÆ, ILLIGER.

GENUS XLVIII — *NUMENIUS*, LATHAM.

215. *NUMENIUS LONGIROSTRIS*, WILS. — LONG-BILLED CURLEW.

WILSON, PLATE LXIV. FIG. IV.

THIS American species has been considered by the naturalists of Europe to be a mere variety of their own, notwithstanding its difference of colour, and superior length of bill. These differences not being accidental, or found in a few individuals, but common to all, and none being found in America corresponding with that of Europe, we do not hesitate to consider the present as a distinct species peculiar to this country.

Like the whooping crane, this bird is an inhabitant of marshes in the vicinity of the sea. It is also found in the interior, where, from its long bill and loud whistling note, it is generally known.

The curlews appear in the salt marshes of New Jersey about the middle of May, on their way to the north, and in September, on their return from their breeding places. Their food consists chiefly of small crabs, which they are very dexterous at probing for, and pulling out of the holes with their long bills; they also feed on those small sea snails so abundant in the marshes, and on various worms and insects. They are likewise fond of brambleberries, frequenting the fields and uplands in search of this fruit, on which they get very fat, and are then tender and good eating, altogether free from the sedgy taste with which their flesh is usually tainted while they feed in the salt marshes.

The curlews fly high, generally in a wedge-like form, somewhat resembling certain ducks, occasionally uttering their loud whistling note, by a dexterous imitation

of which a whole flock may sometimes be enticed within gunshot, while the cries of the wounded are sure to detain them until the gunner has made repeated shots and great havoc among them.

This species is said to breed in Labrador, and in the neighbourhood of Hudson's Bay. A few instances have been known of one or two pair remaining in the salt marshes of Cape May all summer. A person of respectability informed me, that he once started a curlew from her nest, which was composed of a little dry grass, and contained four eggs, very much resembling in size and colour those of the mud hen, or clapper rail. This was in the month of July. Cases of this kind are so rare, that the northern regions must be considered as the general breeding place of this species.

The long-billed curlew is twenty-five inches in length, and three feet three inches in extent, and, when in good order, weighs about thirty ounces; but individuals differ greatly in this respect; the bill is eight inches long, nearly straight for half its length, thence curving considerably downwards to its extremity, where it ends in an obtuse knob that overhangs the lower mandible; the colour black, except towards the base of the lower, where it is of a pale flesh colour; tongue, extremely short, differing in this from the snipe; eye, dark; the general colour of the plumage above is black, spotted and barred along the edge of each feather with pale brown; chin, line over the eye and round the same, pale brownish white; neck, reddish brown, streaked with black; spots on the breast more sparingly dispersed; belly, thighs, and vent, pale plain rufous, without any spots; primaries, black on the outer edges, pale brown on the inner, and barred with black; shaft of the outer one, snowy; rest of the wing, pale reddish brown, elegantly barred with undulating lines of black; tail, slightly rounded, of an ashy brown, beautifully marked with herring bones of black; legs and naked thighs, very pale light blue, or lead colour, the middle toe connected with the two outer ones as far as the first

joint by a membrane, and bordered along the sides with a thick warty edge; lining of the wing, dark rufous, approaching a chestnut, and thinly spotted with black. Male and female alike in plumage. The bill continues to grow in length until the second season, when the bird receives its perfect plumage. The stomach of this species is lined with an extremely thick skin, feeling to the touch like the rough hardened palm of a sailor or blacksmith. The intestines are very tender, measuring usually about three feet in length, and as thick as a swan's quill. On the front, under the skin, there are two thick callosities, which border the upper side of the eye, lying close to the skull. These are common, I believe, to most of the tringa and scolopax tribes, and are probably designed to protect the skull from injury while the bird is probing and searching in the sand and mud.

216. *NUMENIUS HUDSONICUS*, LATHAM.

SCOLOPAX BOREALIS, WILSON. — ESQUIMAUX CURLEW.

WILSON, PLATE LVI. FIG. I.

THE Esquimaux curlew, or, as it is called by our gunners on the sea coast, the short-billed curlew, is peculiar to the new continent. Mr Pennant, indeed, conceives it to be a mere variety of the English whimbrel (*S. phæopus*); but among the great numbers of these birds which I have myself shot and examined, I have never yet met with one corresponding to the descriptions given of the whimbrel, the colours and markings being different, the bill much more bent, and nearly an inch and a half longer, and the manners in certain particulars very different: these reasons have determined its claim to that of an independent species.

The short-billed curlew arrives in large flocks on the sea coast of New Jersey, early in May, from the south, frequent the salt marshes, muddy shores, and inlets, feeding on small worms and minute shell fish. They are most commonly seen on mud flats at low water, in

company with various other waders, and at high water roam along the marshes. They fly high and with great rapidity. A few are seen in June, and as late as the beginning of July, when they generally move off towards the north. Their appearance on these occasions is very interesting: they collect together from the marshes as if by premeditated design, rise to a great height in the air, usually about an hour before sunset, and, forming in one vast line, keep up a constant whistling on their march to the north, as if conversing with one another to render the journey more agreeable. Their flight is then more slow and regular, that the feeblest may keep up with the line of march, while the glittering of their beautifully speckled wings, sparkling in the sun, produces altogether a very pleasing spectacle.

In the month of June, while the dewberries are ripe, these birds sometimes frequent the fields, in company with the long-billed curlews, where brambles abound, soon get very fat, and are at that time excellent eating. Those who wish to shoot them, fix up a shelter of brushwood in the middle of the field, and by that means kill great numbers. In the early part of spring, and indeed during the whole time that they frequent the marshes, feeding on shell fish, they are much less esteemed for the table.

Pennant informs us, that they were seen in flocks innumerable on the hills about Chatteux Bay, on the Labrador coast, from August the 9th to September 6th, when they all disappeared, being on their way from their northern breeding place. He adds, "they kept on the open grounds, fed on the *empetrum nigrum*, and were very fat and delicious." They arrive at Hudson's Bay in April, or early in May,—pair and breed to the north of Albany Fort among the woods,—return in August to the marshes,—and all disappear in September.* About this time they return, in accumulated numbers, to the shores of New Jersey, whence they finally depart for the south early in November.

* *Philosophical Transactions*, lxii, 411.

The Esquimaux curlew is eighteen inches long, and thirty-two inches in extent; the bill, which is four inches and a half long, is black towards the point, and a pale purplish flesh colour near the base; upper part of the head, dark brown, divided by a narrow stripe of brownish white; over each eye extends a broad line of pale drab; iris, dark coloured; hind part of the neck, streaked with dark brown; fore part and whole breast, very pale brown; upper part of the body, pale drab, centred and barred with dark brown, and edged with spots of white on the exterior vanes; three first primaries, black, with white shafts; rump and tail-coverts, barred with dark brown; belly, white; vent, the same, marked with zig-zag lines of brown; whole lining of the wing, beautifully barred with brown on a dark cream ground; legs and naked thighs, a pale lead colour.

GENUS XLIX — *TRINGA*, BRISSONSUBGENUS I. — *HEMIPALMA*, BONAPARTE.217. *TRINGA SEMIPALMATA*, WILSON.

SEMIPALMATED SANDPIPER.

WILSON, PLATE LXIII. FIG. IV.

THIS is one of the smallest of its tribe, and seems to have been entirely overlooked, or confounded with another which it much resembles, (*tringa pusilla*,) and with whom it is often found associated.

Its half webbed feet, however, are sufficient marks of distinction between the two. It arrives and departs with the ruddy plover; flies in flocks with the stints, purres, and a few others; and is sometimes seen at a considerable distance from the sea, on the sandy shores of our fresh water lakes. On the 23d of September I met with a small flock of these birds in Burlington Bay, on Lake Champlain. They are numerous along the sea shores of New Jersey, but retire to the south on the approach of cold weather.

This species is six inches long, and twelve in extent;

the bill is black, an inch long, and very slightly bent; crown and body above, dusky brown, the plumage edged with ferruginous and tipped with white; tail and wings, nearly of a length; sides of the rump, white; rump and tail-coverts, black; wing-quills, dusky black, shafted, and banded with white, much in the manner of the least snipe; over the eye a line of white; lesser coverts, tipped with white; legs and feet, blackish ash, the latter half webbed. Males and females alike in colour.

These birds varied greatly in their size, some being scarcely five inches and a half in length, and the bill not more than three quarters; others measured nearly seven inches in the whole length, and the bill upwards of an inch. In their general appearance they greatly resemble the stints or least snipe; but unless we allow that the same species may sometimes have the toes half webbed, and sometimes divided to the origin,—and this not in one or two solitary instances, but in whole flocks, which would be extraordinary indeed,—we cannot avoid classing this as a new and distinct species.

SUBGENUS II. — *TRINGA*.

218. *TRINGA ALPINA*, LINNÆUS. — *TRINGA ALPINA*, WILSON.

RED-BACKED SANDPIPER.

WILSON, PLATE I.VI. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THIS bird inhabits both the old and new continents, being known in England by the name of the dunlin, and in the United States, along the shores of New Jersey, by that of the red-back. Its residence here is but transient, chiefly in April and May, while passing to the arctic regions to breed, and in September and October, when on its return southward to winter quarters. During their stay, they seldom collect in separate flocks by themselves, but mix with various other species of strand birds, among whom they are rendered conspicuous by the red colour of the upper part of their plumage. They frequent the muddy flats and shores of the salt

marshes at low water, feeding on small worms, and other insects, which generally abound in such places. In the month of May they are extremely fat.

This bird is said to inhabit Greenland, Iceland, Scandinavia, the Alps of Siberia, and, in its migrations, the coasts of the Caspian Sea.* It has not, till now, been recognized by naturalists as inhabiting this part of North America. Wherever its breeding place may be, it probably begins to lay at a late period of the season, as, in numbers of females which I examined on the 1st of June, the eggs were no larger than grains of mustard seed.

Length of the red-back, eight inches and a half, extent, fifteen inches; bill, black, longer than the head, (which would seem to rank it with the snipes,) slightly bent, grooved on the upper mandible, and wrinkled at the base; crown, back, and scapulars, bright reddish rust, spotted with black; wing-coverts, pale olive; quills darker; the first tipt, the latter crossed with white; front, cheeks, hindhead, and sides of the neck, quite round; also the breast, grayish white, marked with small specks of black; belly, white, marked with a broad crescent of black; tail, pale olive, the two middle feathers centred with black; legs and feet, ashy black; toes, divided to their origin, and bordered with a slightly scalloped membrane; irides, very dark.

The males and females are nearly alike in one respect, both differing greatly in colour, even at the same season, probably owing to difference of age; some being of a much brighter red than others, and the plumage dotted with white. In the month of September many are found destitute of the black crescent on the belly; these have been conjectured to be young birds.

* PENNANT.

219. *TRINGA CINEREA*, WILSON. — ASH-COLOURED SANDPIPER.

WILSON, PLATE LVII. FIG. II.* — EDINBURGH COLLEGE MUSEUM.

THE regularly disposed concentric semicircles of white and dark brown that mark the upper parts of the plumage of this species, distinguish it from all others, and give it a very neat appearance. In activity it is superior to the preceding; and traces the flowing and recession of the waves along the sandy beach with great nimbleness, wading and searching among the loosened particles for its favourite food, which is a small thin oval bivalve shell-fish, of a white or pearl colour, and not larger than the seed of an apple. These usually lie at a short depth below the surface; but in some places are seen at low water in heaps, like masses of wet grain, in quantities of more than a bushel together. During the latter part of summer and autumn, these minute shell-fish constitute the food of almost all those busy flocks that run with such activity along the sands, among the flowing and retreating waves. They are universally swallowed whole; but the action of the bird's stomach, assisted by the shells themselves, soon reduces them to a pulp. If we may judge from their effects, they must be extremely nutritious, for almost all those tribes that feed on them are at this season mere lumps of fat. Digging for these in the hard sand would be a work of considerable labour, whereas, when the particles are loosened by the flowing of the sea, the birds collect them with great ease and dexterity. It is amusing to observe with what adroitness they follow and elude the tumbling surf, while at the same time they seem wholly intent on collecting their food.

The ash-coloured sandpiper, the subject of our present account, inhabits both Europe and America. It has been seen in great numbers on the Seal Islands near Chateaux Bay; is said to continue the whole

* Is the *Tringa Icelandica*, Linnæus, in the winter dress.

summer in Hudson's Bay, and breeds there. Mr Pennant suspects that it also breeds in Denmark; and says, that they appear in vast flocks on the Flintshire shores during the winter season.* With us they are also migratory, being only seen in spring and autumn. They are plump birds; and, by those accustomed to the sedgy taste of this tribe, are esteemed excellent eating.

The length of this species is ten inches, extent twenty; bill, black, straight, fluted to nearly its tip, and about an inch and a half long; upper parts, brownish ash, each feather marked near the tip with a narrow semicircle of dark brown, bounded by another of white; tail-coverts, white, marbled with olive; wing-quills, dusky, shafts, white; greater coverts, black, tip with white; some of the primaries edged also with white; tail, plain pale ash, finely edged and tip with white; crown and hindhead, streaked with black, ash, and white; stripe over the eye, cheeks, and chin, white, the former marked with pale streaks of dusky, the latter pure; breast, white, thinly specked with blackish; belly and vent, pure white; legs, a dirty yellowish clay colour; toes, bordered with a narrow, thick, warty membrane; hind toe, directed inwards, as in the turnstone; claws and eye, black.

These birds vary a little in colour, some being considerably darker above, others entirely white below; but, in all, the concentric semicircles on the back, scapulars, and wing-coverts, are conspicuous.

I think it probable that these birds become much lighter coloured during the summer, from the circumstance of having shot one late in the month of June, at Cape May, which was of a pale drab or dun colour. It was very thin and emaciated; and on examination appeared to have been formerly wounded, which no doubt occasioned its remaining behind its companions.

Early in December I examined the same coast every day for nearly two weeks, without meeting with more than one solitary individual of this species, although

* *Arctic Zoology*, p. 474.

in October they were abundant. How far to the southward they extend their migrations, we have no facts that will enable us to ascertain, though it is probable that the shores of the West India islands afford them shelter and resources during our winter.

220. *TRINGA RUFA*, WILSON. — RED-BREASTED SANDPIPER.

WILSON, PLATE LVII. FIG. V.* — EDINBURGH COLLEGE MUSEUM.

Of this prettily marked species I can find no description. The *Tringa Icelandica*, or Aberdeen sandpiper of Pennant and others, is the only species that has any resemblance to it; the descriptions of that bird, however, will not apply to the present.

The common name of this species on our sea coast is the gray-back, and among the gunners it is a particular favourite, being generally a plump, tender, and excellent bird for the table; and, consequently, brings a good price in market.

The gray-backs do not breed on the shores of the Middle States. Their first appearance is early in May. They remain a few weeks, and again disappear until October. They usually keep in small flocks, alight in a close body together on the sand flats, where they search for the small bivalve shells already described. On the approach of the sportsman, they frequently stand fixed and silent for some time; do not appear to be easily alarmed, neither do they run about in the water as much as some others, or with the same rapidity, but appear more tranquil and deliberate. In the month of November, they retire to the south.

This species is ten inches long, and twenty in extent; the bill is black, and about an inch and a half long; the chin, eyebrows, and whole breast, are a pale brownish orange colour; crown, hindhead from the upper mandible backwards, and neck, dull white, streaked with black; back, a pale slaty olive, the feathers tipped with

* Is *Tringa Icelandica*, Linnaeus, in its summer dress.

white, barred and spotted with black and pale ferruginous; tail-coverts, white, elegantly barred with black; wings, plain dusky, black towards the extremity; the greater coverts, tipped with white; shafts of the primaries, white; tail, pale ashy olive, finely edged with white, the two middle feathers somewhat the longest; belly and vent, white, the latter marked with small arrow-heads of black; legs and feet, black; toes, bordered with a narrow membrane; eye, small and black.

In some specimens, both of males and females, the red on the breast was much paler, in others it descended as far as the thighs. Both sexes seemed nearly alike.

221. *TRINGA CINCLUS*. — THE PURRE.

WILSON, PLATE LVII. FIG. III. — EDINBURGH COLLEGE MUSEUM.

THIS is one of the most numerous of our strand birds, as they are usually called, that frequent the sandy beach on the frontiers of the ocean. In its habits it differs so little from the preceding, that, except in being still more active and expert in running and searching among the sand, on the reflux of the waves, as it nimbly darts about for food, what has been said of the former will apply equally to both, they being pretty constant associates on these occasions.

The purre continues longer with us, both in spring and autumn, than either the turnstone or the ash-coloured sandpiper; many of them remain during the very severest of the winter, though the greater part retire to the more genial regions of the south, where I have seen them at such seasons, particularly on the sea coasts of both Carolinas, during the month of February, in great numbers.

These birds, in conjunction with several others, sometimes collect together in such flocks, as to seem, at a distance, a large cloud of thick smoke, varying in form and appearance every instant, while it performs its evolutions in air. As this cloud descends and courses

along the shores of the ocean, with great rapidity, in a kind of waving serpentine flight, alternately throwing its dark and white plumage to the eye, it forms a very grand and interesting appearance. At such times the gunners make prodigious slaughter among them; while, as the showers of their companions fall, the whole body often alight, or descend to the surface with them, till the sportsman is completely satiated with destruction. On some of these occasions, while crowds of these victims are fluttering along the sand, the small pigeon hawk, constrained by necessity, ventures to make a sweep among the dead in presence of the proprietor, but as suddenly pays for his temerity with his life! Such a tyrant is man, when vested with power, and unrestrained by the dread of responsibility.

The purr is eight inches in length, and fifteen inches in extent; the bill is black, straight, or slightly bent downwards, about an inch and a half long, very thick at the base, and tapering to a slender blunt point at the extremity; eye, very small; iris, dark hazel; cheeks, gray; line over the eye, belly, and vent, white; back and scapulars, of an ashy brown, marked here and there with spots of black, bordered with bright ferruginous; sides of the rump, white; tail-coverts, olive, centred with black; chin, white; neck below, gray; breast and sides, thinly marked with pale spots of dusky, in some, pure white; wings, black, edged and tipped with white; two middle tail-feathers, dusky, the rest brown ash, edged with white; legs and feet, black; toes bordered with a very narrow scalloped membrane. The usual broad band of white crossing the wing, forms a distinguishing characteristic of almost the whole genus.

On examining more than a hundred of these birds, they varied considerably in the black and ferruginous spots on the back and scapulars; some were altogether plain, while others were thickly marked, particularly on the scapulars, with a red rust colour, centred with black. The females were uniformly more plain than the males; but many of the latter, probably young birds, were destitute of the ferruginous spots. On the

24th of May the eggs in the females were about the size of partridge shot. In what particular regions of the north these birds breed is altogether unknown.

222. *TRINGA PUSILLA*, WILSON. — LITTLE SANDPIPER.

WILSON, PLATE XXXVII. FIG. IV. — EDINBURGH COLLEGE MUSEUM.

THIS is the least of its tribe in this part of the world, and in its mode of flight has much more resemblance to the snipe than to the sandpiper. It is migratory, departing early in October for the south. It resides chiefly among the sea marshes, and feeds among the mud at low water; springs with a zigzag irregular flight, and a feeble twit. It is not altogether confined to the neighbourhood of the sea, for I have found several of them on the shores of the Schuylkill, in the month of August. In October, immediately before they go away, they are usually very fat. Their nests or particular breeding places I have not been able to discover.

This minute species is found in Europe, and also at Nootka Sound on the western coast of America. Length, five inches and a half; extent, eleven inches; bill and legs, brownish black; upper part of the breast, gray brown, mixed with white; back and upper parts, black; the whole plumage above, broadly edged with bright bay and yellow ochre; primaries, black; greater coverts, the same, tipped with white; eye, small, dark hazel; tail, rounded, the four exterior feathers on each side, dull white, the rest, dark brown; tertials, as long as the primaries; head above, dark brown, with paler edges; over the eye, a streak of whitish; belly and vent, white; the bill is thick at the base, and very slender towards the point; the hind toe, small. In some specimens, the legs were of a dirty yellowish colour. Sides of the rump, white; just below the greater coverts, the primaries are crossed with white.

Very little difference could be perceived between the plumage of the males and females. The bay on the edges of the back and scapulars was rather brighter in the male, and the brown deeper.

SUBGENUS III. — *CALIDRIS*, ILLIGER.223. *TRINGA ARENARIA*, LINN. — *CHARADRIUS CALIDRIS*, WILS.

SANDERLING PLOVER.

WILSON, PLATE LIX. FIG. IV. — WINTER DRESS.

IN this well known bird we have another proof of the imperfection of systematic arrangement, where no attention is paid to the general habits, but where one single circumstance is sometimes considered sufficient to determine the species. The genus plover is characterized by several strong family traits, one of which is that of wanting the hind toe. The sandpipers have also their peculiar external characters of bill, general form, &c. by which they are easily distinguished from the former. The present species, though possessing the bill, general figure, manners, and voice of the sandpipers, feeding in the same way, and associating with these in particular, yet wanting the hind toe, has been classed with the plovers, with whom, this single circumstance excepted, it has no one characteristic in common. Though we have not, in the present instance, presumed to alter this arrangement, yet it appears both reasonable and natural that, where the specific characters in any bird seem to waver between two species, the figure, voice, and habits of the equivocal one, should always be taken into consideration, and be allowed finally to determine the class to which it belongs. Had this rule been followed in the present instance, the bird we are now about to describe would have undoubtedly been classed with the sandpipers.

The history of this species has little in it to excite our interest or attention. It makes its appearance on our sea coasts early in September, continues during the greater part of winter, and on the approach of spring returns to the northern regions to breed. While here, it seems perpetually busy running along the wave-worn strand, following the flux and reflux of the surf, eagerly

picking up its food from the sand amid the roar of the ocean. It flies in numerous flocks, keeping a low, meandering course along the ridges of the tumbling surf. On alighting, the whole scatter about after the receding wave, busily picking up those minute bivalves already described. As the succeeding wave returns, it bears the whole of them before it in one crowded line; then is the moment seized by the experienced gunner to sweep them in flank with his destructive shot. The flying survivors, after a few aerial meanders, again alight, and pursue their usual avocation as busily and as unconcernedly as before. These birds are most numerous on extensive sandy beaches in front of the ocean. Among rocks, marshes, or stones covered with sea-weed, they seldom make their appearance.

The sanderling is eight inches long, and fourteen inches in extent; the bill is black, an inch and a quarter in length, slender, straight, fluted along the upper mandible, and exactly formed like that of the sandpiper; the head, neck above, back, scapulars, and tertials, are gray white; the shafts, blackish, and the webs tinged with brownish ash; shoulder of the wing, black; greater coverts, broadly tipped with white; quills, black, crossed with a transverse band of white; the tail extends a little beyond the wings, and is of a grayish ash colour, edged with white, the two middle feathers being about half an inch longer than the others; eye, dark hazel; whole lower parts of the plumage, pure white; legs and naked part of the thighs, black; feet, three-toed, each divided to its origin, and bordered with a narrow membrane.

Such are the most common markings of this bird, both of males and females, particularly during the winter; but many others occur among them, early in the autumn, thickly marked or spotted with black on the crown, back, scapulars, and tertials, so as to appear much mottled, having as much black as white on those parts. In many of these I have observed the plain gray plumage coming out about the middle of

October, so that, perhaps, the gray may be their winter, and the spotted their summer dress.

I have also met with many specimens of this bird, not only thickly speckled with white and black above, but also on the neck, and strongly tinged on both with ferruginous, in which dress it has been mistaken by Mr Pennant and others for a new species; the description of his "ruddy plover" agreeing exactly with this.*

224. *CHARADRIUS RUBIDUS*, WILSON.

RUDDY PLOVER.

WILSON, PLATE LXIII. FIG. III.†—SUMMER DRESS.

THIS bird is frequently found in company with the sanderling, which, except in colour, it very much resembles. It is generally seen on the sea coast of New Jersey in May and October, on its way to and from its breeding place in the north. It runs with great activity along the edge of the flowing or retreating waves on the sands, picking up the small bivalve shell-fish, which supplies so many multitudes of the plover and sandpiper tribes.

I should not be surprised if the present species turn out hereafter to be the sanderling itself, in a different dress. Of many scores which I examined, scarce two were alike; in some the plumage of the back was almost plain, in others the black plumage was just shooting out. This was in the month of October. Naturalists, however, have considered it as a separate species; but have given us no farther particulars than that, "in Hudson's Bay, it is known by the name of *Mistchaychekiskaweshish*,"‡—a piece of information certainly very instructive.

* See *Arctic Zoology*, p. 486, No. 404.

† This bird is the sanderling plover in its summer dress.

‡ LATHAM.

The ruddy plover is eight inches long, and fifteen in extent; the bill is black, an inch long, and straight; sides of the neck and whole upper parts, speckled largely with white, black, and ferruginous; the feathers being centred with black, tipped with white, and edged with ferruginous, giving the bird a very motley appearance; belly and vent, pure white; wing-quills, black, crossed with a band of white; lesser coverts, whitish, centred with pale olive, the first two or three rows black; two middle tail-feathers, black; the rest, pale cinereous, edged with white; legs and feet, black; toes, bordered with a very narrow membrane. On dissection, both males and females varied in their colours and markings.

GENUS L.—*HIMANTOPUS*, BRISSON.

225. *HIMANTOPUS NIGRICOLLIS*, VIEILL.

RECURVIROSTRA HIMANTOPUS, WILSON. — LONG-LEGGED PLOVER.

WILSON, PLATE LVIII. FIG. II. — EDINBURGH COLLEGE MUSEUM.

NATURALISTS have most unaccountably classed this bird with the genus *charadrius*, or plover, and yet affect to make the particular conformation of the bill, legs, and feet, the rule of their arrangement. In the present subject, however, excepting the trivial circumstance of the want of a hind toe, there is no resemblance whatever of those parts to the bill, legs, or feet, of the plover; on the contrary, they are so entirely different, as to create no small surprise at the adoption and general acceptance of a classification, evidently so absurd and unnatural. This appears the more reprehensible, when we consider the striking affinity there is between this bird and the common avoset, not only in the particular form of the bill, nostrils, tongue, legs, feet, wings, and tail, but extending to the voice, manners, food, place of breeding, form of the nest, and even the very colour of the eggs of both, all of which are strikingly alike, and point out, at once, to the actual

observer of nature, the true relationship of these remarkable birds.

Strongly impressed with these facts, from an intimate acquaintance with the living subjects, in their native wilds, I have presumed to remove the present species to the true and proper place assigned it by nature, and shall now proceed to detail some particulars of its history.

This species arrives on the sea coast of New Jersey about the 25th of April, in small detached flocks, of twenty or thirty together. These sometimes again subdivide into lesser parties; but it rarely happens that a pair is found solitary, as, during the breeding season, they usually associate in small companies. On their first arrival, and, indeed, during the whole of their residence, they inhabit those particular parts of the salt marshes pretty high up towards the land, that are broken into numerous shallow pools, but are not usually overflowed by the tides during the summer. These pools or ponds are generally so shallow, that, with their long legs, the avosets can easily wade them in every direction; and as they abound with minute shell-fish, and multitudes of aquatic insects and their larvæ, besides the eggs and spawn of others deposited in the soft mud below, these birds find here an abundant supply of food, and are almost continually seen wading about in such places, often up to the breast in water.

In the vicinity of these bald places, as they are called fifty yards off, among the thick tufts of grass, one of these small associations, consisting perhaps of six or eight pair, takes up its residence during the breeding season. About the first week in May, they begin to construct their nests, which are at first slightly formed of a small quantity of old grass scarcely sufficient to keep the eggs from the wet marsh. As they lay and sit, however, either dreading the rise of the tides, or for some other purpose, the nest is increased in height, with dry twigs of a shrub very common in the marshes, roots of the salt grass, sea-weed, and various other

substances, the whole weighing between two and three pounds. This habit of adding materials to the nest after the female begins sitting, is common to almost all other birds that breed in the marshes. The eggs are four in number, of a dark yellowish clay colour, thickly marked with large blotches of black. These nests are often placed within fifteen or twenty yards of each other; but the greatest harmony seems to prevail among the proprietors.

While the females are sitting, the males are either wading through the ponds or roaming over the adjoining marshes; but should a person make his appearance, the whole collect together in the air, flying with their long legs extended behind them, keeping up a continual yelping note of *click, click, click*. Their flight is steady, and not in short, sudden jerks, like that of the plover. As they frequently alight on the bare marsh, they drop their wings, stand with their legs half bent, and trembling, as if unable to sustain the burden of their bodies. In this ridiculous posture they will sometimes stand for several minutes, uttering a curring sound, while, from the corresponding quiverings of their wings and long legs, they seem to balance themselves with great difficulty. This singular manœuvre is, no doubt, intended to induce a belief that they may be easily caught, and so turn the attention of the person, from the pursuit of their nests and young, to themselves. The red-necked avoset practises the very same deception, in the same ludicrous manner, and both alight indiscriminately on the ground or in the water. Both will also occasionally swim for a few feet, when they chance, in wading, to lose their depth, as I have had several times an opportunity of observing.

The name by which this bird is known on the sea coast is the stilt, or tilt, or long-shanks. They are but sparingly dispersed over the marshes, having, as has been already observed, their particular favourite spots, while, in large intermediate tracts, there are few or none to be found. They occasionally visit the shore, wading about in the water and in the mud, in search of

food, which they scoop up very dexterously with their delicately formed bills. On being wounded while in the water, they attempt to escape by diving, at which they are by no means expert. In autumn their flesh is tender, and well tasted. They seldom raise more than one brood in the season, and depart for the south early in September. As they are well known in Jamaica, it is probable some of them may winter in that and other of the West India islands.

Mr Pennant observes, that this bird is not a native of northern Europe; and there have been but few instances where it has been seen in Great Britain. It is common, says Latham, in Egypt, being found there in the marshes in October. It is likewise plentiful about the salt lakes, and is often seen on the shores of the Caspian sea, as well as by the rivers which empty themselves into it, and in the southern deserts of Independent Tartary. The same author adds, on the authority of Ray, that it is known at Madras in the East Indies.

All the figures and descriptions which I have seen of this curious bird, represented the bill as straight, and of almost an equal thickness throughout, which I have never found so in any of the numerous specimens I have myself shot and examined. Many of these accounts, as well as figures, have been taken from dried and stuffed skins, which give but an imperfect and often erroneous idea of the true outlines of nature. The dimensions, colours, and markings, of a very beautiful specimen, newly shot, were as follow:—

Length, from the point of the bill to the end of the tail, fourteen inches, to the tips of the wings, sixteen; extent, twenty-eight inches; bill, three inches long, slightly curved upwards, tapering to a fine point, the upper mandible rounded above, the whole of a deep black colour; nostrils, an oblong slit, pervious; tongue, short, pointed; forehead, spot behind the eye, lower eyelid, sides of the neck and whole lower parts, pure white; back, rump, and tail-coverts, also white, but so concealed by the scapulars as to appear black; tail,

even, or very slightly forked, and of a dingy white; the vent-feathers reach to the tip of the tail below; line before the eye, auriculars, back part of the neck, scapulars, and whole wings, deep black, richly glossed with green; legs and naked thighs, a fine pale carmine; the latter measures three, the former four inches and a half in length, exceedingly thin, and so flexible that they may be bent considerably without danger of breaking. This thinness of the leg enables the bird to wade with expedition, and without fatigue. Feet, three-toed, the outer toe connected to the middle one by a broad membrane; wings, long, extending two inches beyond the tail, and sharp pointed; irides, a bright rich scarlet; pupil, black. In some the white from the breast extends quite round the neck, separating the black of the hind neck from that of the body; claws, blackish horn.

The female is about half an inch shorter, and differs in having the plumage of the upper back and scapulars, and also the tertials, of a deep brown colour. The stomach, or gizzard, was extremely muscular, and contained fragments of small snail shells, winged bugs, and a slimy matter, supposed to be the remains of some aquatic worms. In one of these females I counted upwards of one hundred and fifty eggs, some of them as large as buck shot. The singular form of the legs and feet, with the exception of the hind toe and one membrane of the foot, is exactly like those of the avoset. The upper curvature of the bill, though not quite so great, is also the same as in the other, being rounded above, and tapering to a delicate point in the same manner. In short, a slight comparison of the two is sufficient to satisfy the most scrupulous observer that nature has classed these two birds together.

GENUS LI.—TOTANUS, BECHSTEIN.

226. TOTANUS SEMIPALMATUS, TEMMINCK.

SCOLOPAX SEMIPALMATA, WILSON. — SEMIPALMATED SNIFE.

WILSON, PLATE LVI. FIG. III.

THIS is one of the most noisy and noted birds that inhabit our salt marshes in summer. Its common name is the willet, by which appellation it is universally known along the shores of New York, New Jersey, Delaware, and Maryland,—in all of which places it breeds in great numbers.

The willet is peculiar to America. It arrives from the south on the shores of the Middle States about the 20th of April, or beginning of May; and from that time to the last of July, its loud and shrill reiterations of *pill-will-willet*, *pill-will-willet*, resound, almost incessantly, along the marshes, and may be distinctly heard at the distance of more than half a mile. About the 20th of May, the willets generally begin to lay.* Their nests are built on the ground, among the grass of the salt marshes, pretty well towards the land, or cultivated fields, and are composed of wet rushes and coarse grass, forming a slight hollow or cavity in a tussock. This nest is gradually increased during the period of laying and sitting, to the height of five or six inches. The eggs are usually four in number, very thick at the great end, and tapering to a narrower point at the other than those of the common hen; they measure two inches and one eighth in length, by one and a half in their greatest breadth, and are of a dark dingy olive, largely blotched with blackish brown, particularly at the great end. In some, the ground colour has a tinge of green; in others, of bluish. They are excellent eating, as I have often experienced when obliged to dine on them in my hunting excursions

* From some unknown cause, the height of laying of these birds is said to be full two weeks later than it was twenty years ago.

through the salt marshes. The young are covered with a grey-coloured down; run off soon after they leave the shell; and are led and assisted in their search of food by the mother, while the male keeps a continual watch around for their safety.

The anxiety and affection manifested by these birds for their eggs and young, are truly interesting. A person no sooner enters the marshes, than he is beset by the willets, flying around and skimming over his head, vociferating with great violence their common cry of *pill-will-willet*; and uttering at times a loud clicking note, as he approaches nearer to their nest. As they occasionally alight, and slowly shut their long white wings speckled with black, they have a mournful note, expressive of great tenderness. During the term of incubation, the female often resorts to the sea shore, where, standing up to the belly in water, she washes and dresses her plumage, seeming to enjoy great satisfaction from these frequent immersions. She is also at other times seen to wade more in the water than most of her tribe; and, when wounded in the wing, will take to the water without hesitation, and swims tolerably well.

The eggs of the willet, in every instance which has come under my observation, are placed, during incubation, in an almost upright position, with the large end uppermost; and thus appears to be the constant practice of several other species of birds that breed in these marshes. During the laying season, the crows are seen roaming over the marshes in search of eggs, and wherever they come, spread consternation and alarm among the willets, who, in united numbers, attack and pursue them with loud clamours. It is worthy of remark, that, among the various birds that breed in these marshes, a mutual respect is paid to each other's eggs; and it is only from intruders on the land side, such as crows, jays, weasels, foxes, minx, and man himself, that these affectionate tribes have most to dread.

The willet subsists chiefly on small shell fish, marine

worms, and other aquatic insects; in search of which, it regularly resorts to the muddy shores and flats at low water; its general rendezvous being the marshes.

This bird has a summer and also a winter dress, its colours differing so much in these seasons as scarcely to appear to be the same species. Its spring and summer plumage, in a good specimen, is as follows:—

Length, fifteen inches; extent, thirty inches; upper parts, dark olive brown; the feathers, streaked down the centre, and crossed with waving lines of black; wing-coverts, light olive ash, and the whole upper parts sprinkled with touches of dull yellowish white; primaries, black, white at the root half; secondaries, white, bordered with brown; rump, dark brown; tail, rounded, twelve feathers, pale olive, waved with bars of black; tail-coverts, white, barred with olive; bill, pale lead colour, becoming black towards the tip; eye, very black; chin, white; breast, beautifully mottled with transverse spots of olive on a cream ground; belly and vent, white, the last barred with olive; legs and feet, pale lead colour; toes, half webbed.

Towards the fall, when these birds associate in large flocks, they become of a pale dun colour above, the plumage being shafted with dark brown, and the tail white, or nearly so. At this season they are extremely fat, and esteemed excellent eating. Experienced gunners always select the lightest coloured ones from a flock, as being uniformly the fattest.

The female of this species is generally larger than the male. In the months of October and November, they gradually disappear.

227. *TOTANUS FLAVIPES*, VIEILL. — *SCOLOPAX FLAVIPES*, WILSON.

YELLOW-SHANKS SNIPE.

WILSON, PLATE LVIII, FIG. IV.

OF this species I have but little to say. It inhabits our sea coasts and salt marshes during summer; frequents the flats at low water, and seems particularly fond of walking among the mud, where it doubtless finds its favourite food in abundance. I have never met with its nest, nor with any person acquainted with its particular place or manner of breeding. It is a plentiful species, and great numbers are brought to market in Boston, New York, and Philadelphia, particularly in autumn. Though these birds do not often penetrate far inland, yet, on the 5th September, I shot several dozens of them in the meadows of Schuylkill, below Philadelphia. There had been a violent northeast storm a day or two previous, and a large flock of these, accompanied by several species of *tringa*, and vast numbers of the short-tailed tern, appeared at once among the meadows. As a bird for the table, the yellow-shanks, when fat, is in considerable repute. Its chief residence is in the vicinity of the sea, where there are extensive mud flats. It has a sharp whistle, of three or four notes, when about to take wing, and when flying. These birds may be shot down with great facility, if the sportsman, after the first discharge, will only lie close, and permit the wounded birds to flutter about without picking them up; the flock will generally make a circuit, and alight repeatedly, until the greater part of them may be shot down.

Length of the yellow-shanks, ten inches; extent, twenty; bill, slender, straight, an inch and a half in length, and black; line over the eye, chin, belly, and vent, white; breast and throat, gray; general colour of the plumage above, dusky brown olive, inclining to ash, thickly marked with small triangular spots of dull

white ; tail-coverts, white ; tail, also white, handsomely barred with dark olive ; wings, plain dusky, the secondaries edged, and all the coverts edged and tipped with white ; shafts, black ; eye, also black ; legs and naked thighs, long and yellow ; outer toe, united to the middle one by a slight membrane ; claws, a horn colour. The female can scarcely be distinguished from the male.

228. *TOTANUS MELANOLEUCUS*, VIEILL.

SCOLOPAX VOCIFERUS, WILSON. — TELL-TALE GODWIT, OR SNIP.

WILSON, PLATE LVIII. FIG. V.

THIS species and the preceding are both well known to our duck-gunners along the sea coast and marshes, by whom they are detested and stigmatized with the names of the greater and lesser tell-tale, for their faithful vigilance in alarming the ducks with their loud and shrill whistle, on the first glimpse of the gunner's approach. Of the two, the present species is by far the most watchful ; and its whistle, which consists of four notes rapidly repeated, is so loud, shrill, and alarming, as instantly to arouse every duck within its hearing, and thus disappoints the eager expectations of the marksman. Yet the cunning and experience of the latter are frequently more than a match for all of them ; and before the poor tell-tale is aware, his warning voice is hushed for ever, and his dead body mingled with those of his associates.

This bird arrives on our coast early in April, breeds in the marshes, and continues until November, about the middle of which month it generally moves off to the south. The nest, I have been informed, is built in a tuft of thick grass, generally on the borders of a bog or morass. The female, it is said, lays four eggs, of a dingy white, irregularly marked with black.

These birds appear to be unknown in Europe. They are simply mentioned by Mr Pennant, as having been observed in autumn, feeding on the sands on the lower

part of Chatteaux Bay, continually nodding their heads, and were called there stone curlews.*

The tell-tale seldom flies in large flocks, at least during summer. It delights in watery bogs, and the muddy margins of creeks and inlets; is either seen searching about for food, or standing in a watchful posture, alternately raising and lowering the head, and, on the least appearance of danger, utters its shrill whistle, and mounts on wing, generally accompanied by all the feathered tribes that are near. It occasionally penetrates inland along the muddy shores of our large rivers, seldom higher than tide water, and then singly and solitary. They sometimes rise to a great height in the air, and can be distinctly heard when beyond the reach of the eye. In the fall, when they are fat, their flesh is highly esteemed, and many of them are brought to our markets. The colours and markings of this bird are so like those of the preceding, that, unless in point of size, and the particular curvature of the bill, the description of one might serve for both.

The tell-tale is fourteen inches and a half long, and twenty-five inches in extent; the bill is two inches and a quarter long, of a dark horn colour, and slightly bent upwards; the space round the eye, chin, and throat, pure white; lower part of the neck, pale ashy white, speckled with black; general colour of the upper parts, an ashy brown, thickly spotted with black and dull white, each feather being bordered and spotted on the edge with black; wing-quills, black; some of the primaries, and all of the secondaries, with their coverts, spotted round the margins with black and white; head and neck above, streaked with black and white; belly and vent, pure white; rump, white, dotted with black; tail, also white, barred with brown; the wings, when closed, reach beyond the tail; thighs, naked, nearly two inches above the knees; legs, two inches and three quarters long; feet, four-toed, the outer joined by a

* *Arctic Zoology*, p. 468.

membrane to the middle, the whole of a rich orange yellow. The female differs little in plumage from the male; sometimes the vent is slightly dotted with black, and the upper parts more brown.

Nature seems to have intended this bird as a kind of spy, or sentinel, for the safety of the rest; and so well acquainted are they with the watchful vigilance of this species, that, while it continues silent among them, the ducks feed in the bogs and marshes without the least suspicion. The great object of the gunner is to escape the penetrating glance of this guardian, which is sometimes extremely difficult to effect. On the first whistle of the tell-tale, if beyond gunshot, the gunner abandons his design, but not without first bestowing a few left-handed blessings on the author of his disappointment.

229. *TOTANUS BARTRAMIUS*, TFM. — *TRINGIA BARTRAMIA*, WILS.

BARTRAM'S SANDPIPER.

WILSON, PLATE LIX. FIG. II.

THIS bird being, as far as I can discover, a new species, undescribed by any former author, I have honoured it with the name of my very worthy friend, near whose botanic gardens, on the banks of the river Schuylkill, I first found it. On the same meadows, I have since shot several other individuals of the species, and have thereby had an opportunity of making an accurate description of it.

Unlike most of their tribe, these birds appear to prefer running about among the grass, feeding on beetles, and other winged insects. There were three or four in company; they seemed extremely watchful, silent, and shy, so that it was always with extreme difficulty I could approach them.

These birds are occasionally seen there during the months of August and September, but whether they breed near I have not been able to discover. Having never met with them on the sea shore, I am persuaded that their principal residence is in the interior, in

meadows, and such like places. They run with great rapidity, sometimes spreading their tail, and dropping their wings, as birds do who wish to decoy you from their nest; when they alight, they remain fixed, stand very erect, and have two or three sharp whistling notes as they mount to fly. They are remarkable plump birds, weighing upwards of three quarters of a pound; their flesh is superior, in point of delicacy, tenderness, and flavour, to any other of the tribe with which I am acquainted.

This species is twelve inches long, and twenty-one in extent; the bill is an inch and a half long, slightly bent downwards, and wrinkled at the base, the upper mandible, black on its ridge, the lower, as well as the edge of the upper, of a fine yellow; front, stripe over the eye, neck, and breast, pale ferruginous, marked with small streaks of black, which, on the lower part of the breast, assume the form of arrow heads; crown, black, the plumage slightly skirted with whitish; chin, orbit of the eye, whole belly, and vent, pure white; hind head, and neck above, ferruginous, minutely streaked with black; back and scapulars, black, the former, slightly skirted with ferruginous, the latter, with white; tertials, black, bordered with white; primaries, plain black; shaft of the exterior quill, snowy, its inner vane, elegantly pectinated with white; secondaries, pale brown, spotted on their outer vanes, with black, and tipped with white; greater coverts, dusky, edged with pale ferruginous, and spotted with black; lesser coverts, pale ferruginous, each feather broadly bordered with white, within which is a concentric semicircle of black; rump, and tail-coverts, deep brown black, slightly bordered with white; tail, tapering, of a pale brown orange colour, beautifully spotted with black, the middle feathers centred with dusky; legs, yellow, tinged with green; the outer toe joined to the middle by a membrane; lining of the wings, elegantly barred with black and white; iris of the eye, dark, or blue black, eye, very large. The male and female are nearly alike.

250. *TOTANUS CHLOROPYGIUS*, VIEILL.*TRINGA SOLITARIA*, WILSON. — SOLITARY SANDPIPER.

WILSON, PLATE LVIII. FIG. III.

THIS new species inhabits the watery solitudes of our highest mountains during the summer, from Kentucky to New York; but is no where numerous, seldom more than one or two being seen together. It takes short, low flights; runs nimbly about among the mossy margins of the mountain springs, brooks, and pools, occasionally stopping, looking at you, and perpetually nodding the head. It is so unsuspicious, or so little acquainted with man, as to permit one to approach within a few yards of it, without appearing to take any notice, or to be the least alarmed. At the approach of cold weather, it descends to the muddy shores of our large rivers, where it is occasionally met with, singly, on its way to the south. I have made many long and close searches for the nest of this bird, without success. They regularly breed on Pocano mountain, between Easton and Wilkesbarre, in Pennsylvania, arriving there early in May, and departing in September. It is usually silent, unless when suddenly flushed, when it utters a sharp whistle.

This species has considerable resemblance, both in manners and markings, to the green sandpiper of Europe (*tringa ochropus*;) but differs from that bird in being nearly one-third less, and in wanting the white rump and tail-coverts of that species; it is also destitute of its silky olive green plumage. How far north its migrations extend, I am unable to say.

The solitary sandpiper is eight inches and a half long, and fifteen inches in extent; the bill is one inch and a quarter in length, and dusky; nostrils, pervious, bill, fluted above and below; line over the eye, chin, belly, and vent, pure white; breast, white, spotted with pale olive brown; crown and neck above,

dark olive, streaked with white; back, scapulars, and rump, dark brown olive, each feather marked along the edges with small round spots of white; wings, plain, and of a darker tint; under tail-covert, spotted with black; tail, slightly rounded, the five exterior feathers on each side, white, broadly barred with black; the two middle ones, as well as their coverts, plain olive; legs, long, slender, and of a dusky green. Male and female alike in colour.

231. *TOTANUS MACULARIUS*, TEMMINCK.

TRINGA MACULARIA, WILSON. — SPOTTED SANDPIPER.

WILSON, PLATE LIX. FIG. 1. — EDINBURGH COLLEGE MUSEUM.

THIS very common species arrives in Pennsylvania about the 20th of April, making its first appearance along the shores of our large rivers, and, as the season advances, tracing the courses of our creeks and streams towards the interior. Along the rivers Schuylkill and Delaware, and their tributary waters, they are in great abundance during the summer. This species is as remarkable for perpetually wagging the tail, as some others are for nodding the head; for, whether running on the ground, or on the fences, along the rails, or in the water, this motion seems continual; even the young, as soon as they are freed from the shell, run about constantly wagging the tail. About the middle of May, they resort to the adjoining corn fields to breed, where I have frequently found and examined their nests. One of these now before me, and which was built at the root of a hill of Indian corn, on high ground, is composed wholly of short pieces of dry straw. The eggs are four, of a pale clay or cream colour, marked with large irregular spots of black, and more thinly with others of a paler tint. They are large, in proportion to the size of the bird, measuring an inch and a quarter in length, very thick at the great end, and tapering suddenly to the other. The young run about with wonderful speed, as soon as they leave the shell, and

are then covered with down of a dull drab colour, marked with a single streak of black down the middle of the back, and with another behind each ear. They have a weak, plaintive note. On the approach of any person, the parents exhibit symptoms of great distress, counterfeiting lameness, and fluttering along the ground with seeming difficulty. On the appearance of a dog, this agitation is greatly increased; and it is very interesting to observe with what dexterity she will lead him from her young, by throwing herself repeatedly before him, fluttering off, and keeping just without his reach, on a contrary direction from her helpless brood. My venerable friend, Mr William Bartram, informs me, that he saw one of these birds defend her young for a considerable time from the repeated attacks of a ground squirrel. The scene of action was on the river shore. The parent had thrown herself, with her two young behind her, between them and the land; and at every attempt of the squirrel to seize them by a circuitous sweep, raised both her wings in an almost perpendicular position, assuming the most formidable appearance she was capable of, and rushed forwards on the squirrel, who, intimidated by her boldness and manner, instantly retreated; but presently returning, was met, as before, in front and on flank by the daring and affectionate bird, who, with her wings and whole plumage bristling up, seemed swelled to twice her usual size. The young crowded together behind her, apparently sensible of their perilous situation, moving backwards and forwards as she advanced or retreated. This interesting scene lasted for at least ten minutes; the strength of the poor parent began evidently to flag, and the attacks of the squirrel became more daring and frequent, when my good friend, like one of those celestial agents who, in Homer's time, so often decided the palm of victory, stepped forward from his retreat, drove the assailant back to his hole, and rescued the innocent from destruction.

The flight of this bird is usually low, skimming along the surface of the water, its long wings making a

considerable angle downwards from the body, while it utters a rapid cry of *weet, weet, weet* as it flutters along, seldom steering in a direct line up or down the river, but making a long circuitous sweep, stretching a great way out, and gradually bending in again to the shore.

These birds are found occasionally along the sea marshes, as well as in the interior; and also breed in the corn fields there, frequenting the shore in search of food; but rarely associating with the other *tringæ*. About the middle of October, they leave us, on their way to the south, and do not, to my knowledge, winter in any of the Atlantic States.

Mr Pennant is of opinion, that this same species is found in Britain; but neither his description, nor that of Mr Bewick, will apply correctly to this. The following particulars will enable Europeans to determine this matter to their satisfaction:

Length of the spotted sandpiper, seven inches and a half, extent, thirteen inches; bill, an inch long, straight, the tip and upper mandible, dusky, lower, orange; stripe over the eye, and lower eyelid, pure white; whole upper parts, a glossy olive, with greenish reflections, each feather marked with waving spots of dark brown; wing-quills, deep dusky; bastard wing, bordered and tipped with white; a spot of white on the middle of the inner vane of each quill feather except the first; secondaries tipped with white; tail, rounded, the six middle feathers, greenish olive, the other three on each side, white, barred with black; whole lower parts, white, beautifully marked with roundish spots of black, small and thick on the throat and breast, larger and thinner as they descend to the tail; legs, a yellow clay colour; claws, black.

The female is as thickly spotted below as the male; but the young birds of both sexes are pure white below, without any spots; they also want the orange on the bill. These circumstances I have verified on numerous individuals.

GENUS LII.—*LIMOSA*, BRISSON.232. *LIMOSA FEDOA*, VIEILL.—*SCOLOPAX FEDOA*, WILSON.

GREAT MARBLED GODWIT.

WILSON, PLATE LVI. FIG IV. FEMALE.

THIS bird is a transient visitant of our sea coasts in spring and autumn, to and from its breeding place in the north. Our gunners call it the straight-billed curlew, and sometimes the red curlew. It is a shy, cautious, and watchful bird; yet so strongly are they attached to each other, that, on wounding one in a flock, the rest are immediately arrested in their flight, making so many circuits over the spot where it lies fluttering and screaming, that the sportsman often makes great destruction among them. Like the curlew, they may also be enticed within shot, by imitating their call or whistle; but can seldom be approached without some such manœuvre. They are much less numerous than the short-billed curlews, with whom, however, they not unfrequently associate. They are found among the salt marshes in May, and for some time in June, and also on their return, in October and November; at which last season they are usually fat, and in high esteem for the table.

The female of this bird has been described by several writers as a distinct species from the male; the chief difference consists in the undulating bars of black with which the breast of the male is marked, and which are wanting in the female.

The male of the great marbled godwit is nineteen inches long, and thirty-four inches in extent; the bill is nearly six inches in length, a little turned up towards the extremity, where it is black, the base is of a pale purplish flesh colour; chin and upper part of the throat, whitish; head and neck, mottled with dusky brown and black on a ferruginous ground; breast, barred with wavy lines of black; back and scapulars black; marbled

with pale brown; rump and tail-coverts, of a very light brown, barred with dark brown; tail, even, except the two middle feathers, which are a little the longest; wings, pale ferruginous, elegantly marbled with dark brown, the four first primaries black on the outer edge; whole lining and lower parts of the wings, bright ferruginous; belly and vent, light rust colour, with a tinge of lake.

The female differs in wanting the bars of black on the breast. The bill does not acquire its full length before the third year.

About fifty different species of the *scolopax* genus are enumerated by naturalists. These are again, by some, separated into three classes, or subgenera; viz. the straight-billed, or snipes; those with bills bent downwards, or the curlews; and those whose bills are slightly turned upwards, or godwits. The whole are a shy, timid, and solitary tribe, frequenting those vast marshes, swamps, and morasses, that frequently prevail in the vicinity of the ocean, and on the borders of large rivers. They are also generally migratory, on account of the periodical freezing of those places in the northern regions, where they procure their food. The godwits are particularly fond of salt marshes; and are rarely found in countries remote from the sea.

GENUS LIII—*SCOLOPAX*

SUBGENUS I.—*MACRORAMPHUS*, LEACH.

233. *SCOLOPAX GRISEA*, Gmelin.

SCOLOPAX NOVEBORACENSIS, WILSON. — BLD-BREASTED SNIPP.

WILSON, PLATE XLVII. FIG. 1.

This bird has a considerable resemblance to the common snipe, not only in its general form, size, and colours, but likewise in the excellence of its flesh, which is in high estimation. It differs, however, greatly from the common snipe in its manners, and in

many other peculiarities, a few of which, as far as I have myself observed, may be sketched as follows :—

The red-breasted snipe arrives on the sea coast of New Jersey early in April; is seldom or never seen inland: early in May, it proceeds to the north to breed, and returns by the latter part of July, or beginning of August. During its stay here, it flies in flocks, sometimes very high, and has then a loud and shrill whistle, making many evolutions over the marshes; forming, dividing, and reuniting. They sometimes settle in such numbers, and so close together, that eighty-five have been shot at one discharge of a musket. They spring from the marshes with a loud twirling whistle, generally rising high, and making several circuitous manœuvres in air, before they descend. They frequent the sand bars and mud flats at low water, in search of food; and, being less suspicious of a boat than of a person on shore, are easily approached by this medium, and shot down in great numbers. They usually keep by themselves, being very numerous; are in excellent order for the table in September; and, on the approach of winter, retire to the south.

I have frequently amused myself with the various action of these birds: They fly very rapidly, sometimes wheeling, coursing and doubling along the surface of the marshes; then shooting high in air, there separating and forming in various bodies, uttering a kind of quivering whistle. Among many which I opened in May, were several females that had very little rufous below, and the backs were also much lighter, and less marbled with ferruginous. The eggs contained in their ovaries were some of them as large as garden peas. Their stomachs contained masses of those small snail shells that lie in millions on the salt marshes; the wrinkles at the base of the bill, and the red breast, are strong characters of this species, as also the membrane which unites the outer and middle toes together.

The red-breasted snipe is ten inches and a half long, and eighteen inches in extent; the bill, is about two inches and a quarter in length, straight, grooved, black

towards the point, and of a dirty eelskin colour at the base, where it is tumid and wrinkled; lores, dusky; cheeks and eyebrows, pale yellowish white, mottled with specks of black; throat and breast, a reddish buff colour; sides, white, barred with black; belly and vent, white, the latter barred with dusky; crown, neck above, back, scapulars, and tertials, black, edged, mottled, and marbled with yellowish white, pale and bright ferruginous, much in the same manner as the common snipe; wings, plain olive, the secondaries, centred and bordered with white; shaft of the first quill, very white; rump, tail-coverts, and tail (which consists of twelve feathers,) white, thickly spotted with black; legs and feet, dull yellowish green; outer toe united to the middle one by a small membrane; eye, very dark. The female, which is paler on the back, and less ruddy on the breast, has been described by Mr Pennant as a separate species.*

These birds doubtless breed not far to the northward of the United States, if we may judge from the lateness of the season when they leave us in spring, the largeness of the eggs in the ovaries of the females before they depart, and the short period of time they are absent. Of all our sea-side snipes, it is the most numerous, and the most delicious for the table. From these circumstances, and the crowded manner in which it flies and settles, it is the most eagerly sought after by our gunners, who send them to market in great numbers.

SCIEGINUS II. — *SCOLOPAX*, VIFILL.

234. *SCOLOPAX BRILHMII*, KAUP. — *SCOLOPAX GALIINAGO*, WILS.

SNIFE.

WILSON, PLATE LVIII. FIG. I.

THIS bird is well known to our sportsmen; and, if not the same, has a very near resemblance to the common snipe of Europe. It is usually known by the

* See his Brown Snipe, *Arctic Zoology*, No. 369.

name of the English snipe, to distinguish it from the woodcock, and from several others of the same genus. It arrives in Pennsylvania about the 10th of March, and remains in the low grounds for several weeks; the greater part then move off to the north, and to the higher inland districts, to breed. A few are occasionally found, and, consequently, breed, in our low marshes, during the summer. When they first arrive, they are usually lean; but, when in good order, are accounted excellent eating. They are perhaps the most difficult to shoot of all our birds, as they fly in sudden zigzag lines, and very rapidly. Great numbers of these birds winter on the rice grounds of the Southern States, where, in the month of February, they appeared to be much fatter than they are usually here, as I frequently observed them running about among the springs and watery thickets. I was told by the inhabitants that they generally disappeared early in the spring. On the 20th of March, I found these birds extremely numerous on the borders of the ponds near Louisville, Kentucky, and also in the neighbourhood of Lexington, in the same State, as late as the 10th of April. I was told by several people that they are abundant in the Illinois country, up as far as lake Michigan. They are but seldom seen in Pennsylvania during the summer, but are occasionally met with in considerable numbers on their return in autumn, along the whole eastern side of the Alleghany, from the sea to the mountains. They have the same soaring irregular flight in the air, in gloomy weather, as the snipe of Europe; the same bleating note and occasional rapid descent; spring from the marshes with the like feeble *squeak*; and, in every respect resemble the common snipe of Britain, except in being about an inch less; and in having sixteen feathers in the tail instead of fourteen, the number said by Bewick to be in that of Europe. From these circumstances, we must either conclude this to be a different species, or partially changed by difference of climate; the former appears to me the most probable opinion of the two.

These birds abound in the meadows and low grounds along our large rivers, particularly those that border the Schuylkill and Delaware, from the 10th of March to the middle of April, and sometimes later, and are eagerly sought after by many of our gunners. The nature of the grounds, however, which these birds frequent, the coldness of the season, and peculiar shyness and agility of the game, render this amusement attractive only to the most dexterous, active, and eager of our sportsmen.

The snipe is eleven inches long, and seventeen inches in extent; the bill is more than two inches and a half long, fluted lengthwise, of a brown colour, and black towards the tip, where it is very smooth while the bird is alive, but, soon after it is killed, becomes dimpled, like the end of a thimble; crown, black, divided by an irregular line of pale brown; another broader one of the same tint passes over each eye; from the bill to the eye, there is a narrow dusky line; neck and upper part of the breast, pale brown, variegated with touches of white and dusky; chin, pale; back and scapulars, deep velvety black, the latter elegantly marbled with waving lines of ferruginous, and broadly edged exteriorly with white; wings, plain dusky, all the feathers, as well as those of the coverts, tipped with white; shoulder of the wing, deep dusky brown, exterior quill, edged with white; tail-coverts, long, reaching within three quarters of an inch of the tip, and of a pale rust colour, spotted with black; tail, rounded, deep black, ending in a bar of bright ferruginous, crossed with a narrow waving line of black, and tipped with whitish; belly, pure white; sides, barred with dusky; legs and feet, a very pale ashy green; sometimes the whole thighs and sides of the vent are barred with dusky and white.

The female differs in being more obscure in her colours; the white on the back being less pure, and the black not so deep.

SUBGENUS III. — *RUBICOLA*, VIEILL.235. *SCOLOPAX MINOR*, Gmelin and Wilson.

AMERICAN WOODCOCK.

WILSON, PLATE XLVIII. FIG. II.

THIS bird, like the rail, is universally known to our sportsmen. It arrives in Pennsylvania early in March, sometimes sooner; and I doubt not but in mild winters some few remain with us the whole of that season. During the day, they keep to the woods and thickets, and, at the approach of evening, seek the springs and open watery places to feed in. They soon disperse themselves over the country to breed. About the beginning of July, particularly in long continued hot weather, they descend to the marshy shores of our large rivers, their favourite springs and watery recesses inland being chiefly dried up. To the former of these retreats, they are pursued by the merciless sportsman, flushed by dogs, and shot down in great numbers. This species of amusement, when eagerly followed, is still more laborious and fatiguing than that of snipe shooting; and, from the nature of the ground, or cripple, as it is usually called, viz. deep mire intersected with old logs, which are covered and hid from sight by high reeds, weeds, and alder bushes, the best dogs are soon tired out; and it is customary with sportsmen who regularly pursue this diversion, to have two sets of dogs, to relieve each other alternately.

The woodcock usually begins to lay in April. The nest is placed on the ground, in a retired part of the woods, frequently at the root of an old stump. It is formed of a few withered leaves and stalks of grass laid with very little art. The female lays four, sometimes five eggs, about an inch and a half long, and an inch or rather more in diameter, tapering suddenly to the small end. These are of a dun clay colour, thickly marked with spots of brown, particularly at the great

end, and interspersed with others of a very pale purple. The nest of the woodcock has, in several instances that have come to my knowledge, been found with eggs in February; but its usual time of beginning to lay is early in April. In July, August, and September, they are considered in good order for shooting.

The woodcock is properly a nocturnal bird, feeding chiefly at night, and seldom stirring about till after sunset. At such times, as well as in the early part of the morning, particularly in spring, he rises by a kind of spiral course to a considerable height in the air, uttering at times a sudden *quack*, till, having gained his utmost height, he hovers around in a wild irregular manner, making a sort of murmuring sound; then descends with rapidity as he rose. When uttering his common note on the ground, he seems to do it with difficulty, throwing his head towards the earth, and frequently jetting up his tail. These notes and manœuvres are most usual in spring, and are the call of the male to his favourite female. Their food consists of various larvæ, and other aquatic worms, for which, during the evening, they are almost continually turning over the leaves with their bill, or searching in the bogs. Their flesh is reckoned delicious, and prized highly. They remain with us till late in autumn, and, on the falling of the first snows, descend from the ranges of the Alleghany to the lower parts of the country in great numbers; soon after which, viz. in November, they move off to the south.

This bird, in its general figure and manners, greatly resembles the woodcock of Europe, but is considerably less, and very differently marked below, being an entirely distinct species. A few traits will clearly point out their differences. The lower parts of the European woodcock are thickly barred with dusky waved lines, on a yellowish white ground. The present species has those parts of a bright ferruginous. The male of the American species weighs from five to six ounces, the female, eight; the European, twelve. The European woodcock makes its first appearance in Britain in

October and November, that country being in fact only its winter quarters; for, early in March, they move off to the northern parts of the Continent to breed. The American species, on the contrary, winters in countries south of the United States, arrives here early in March, extends its migrations as far, at least, as the river St Lawrence, breeds in all the intermediate places, and retires again to the south on the approach of winter. The one migrates from the torrid to the temperate regions, the other, from the temperate to the arctic. The two birds, therefore, notwithstanding their names are the same, differ not only in size and markings, but also in native climate. Hence the absurdity of those who would persuade us, that the woodcock of America crosses the Atlantic to Europe, and *vice versa*. These observations have been thought necessary, from the respectability of some of our own writers, who seem to have adopted this opinion.

How far to the north our woodcock is found, I am unable to say. It is not mentioned as a bird of Hudson's Bay, and, being altogether unknown in the northern parts of Europe, it is very probable that its migrations do not extend to a very high latitude; for, it may be laid down as a general rule, that those birds which migrate to the arctic regions, in either continent, are very often common to both. The head of the woodcock is of singular conformation, large, somewhat triangular, and the eye fixed at a remarkable distance from the bill, and high in the head. This construction was necessary to give a greater range of vision, and to secure the eye from injury, while the owner was searching in the mire. The flight of the woodcock is slow. When flushed at any time in the woods, he rises to the height of the bushes or underwood, and almost instantly drops behind them again at a short distance, generally running off for several yards as soon as he touches the ground. The notion that there are two species of woodcock in this country probably originated from the great difference of size between the male and female, the latter being considerably the larger.

The male woodcock is ten inches and a half long, and sixteen inches in extent; bill, a brownish flesh colour, black towards the tip, the upper mandible ending in a slight knob, that projects about one-tenth of an inch beyond the lower,* each grooved, and, in length, somewhat more than two inches and a half; forehead, line over the eye, and whole lower parts, reddish tawny; sides of the neck, inclining to ash; between the eye and bill, a slight streak of dark brown; crown, from the forepart of the eye backwards, black, crossed by three narrow bands of brownish white; cheeks, marked with a bar of black, variegated with light brown; edges of the back, and of the scapulars, pale bluish white; back and scapulars, deep black, each feather tipped or marbled with light brown and bright ferruginous, with numerous fine zigzag lines of black crossing the lighter parts; quills, plain dusky brown; tail, black, each feather marked along the outer edge with small spots of pale brown, and ending in narrow tips, of a pale drab colour above, and silvery white below; lining of the wing, bright rust; legs and feet, a pale reddish flesh colour; eye, very full and black, seated high and very far back in the head; weight, five ounces and a half, sometimes six.

The female is twelve inches long, and eighteen in extent; weighs eight ounces; and differs also in having the bill very near three inches in length; the black on the back is not quite so intense; and the sides under the wings are slightly barred with dusky.

The young woodcocks of a week or ten days old are covered with down of a brownish white colour, and are marked from the bill along the crown to the hind head, with a broad stripe of deep brown; another line of the

* Mr Pennant, (*Arctic Zoology*, p. 463,) in describing the American woodcock, says, that the lower mandible is much shorter than the upper. From the appearance of his figure, it is evident that the specimen from which that and his description were taken had lost nearly half an inch from the lower mandible, probably broken off by accident. Turton and others have repeated this mistake.

same passes through the eyes to the hindhead, curving under the eye ; from the back to the rudiments of the tail, runs another of the same tint, and also on the sides under the wings ; the throat and breast are considerably tinged with rufous ; and the quills at this age are just bursting from their light blue sheaths, and appear marbled, as in the old birds ; the legs and bill are of a pale purplish ash colour, the latter about an inch long. When taken, they utter a long, clear, but feeble *peep*, not louder than that of a mouse. They are far inferior to young partridges in running and skulking ; and, should the female unfortunately be killed, may easily be taken on the spot.

FAMILY XXI.

MACRODACTYLI, ILLIGER.

GENUS LIV. — *RALLUS*, LINNÆUS.

SUBGENUS I. — *RALLUS*, ILLIGER.

236. *RALLUS CREPITANS*, LINNÆUS AND WILSON.

CLAPPER RAIL.

WILSON, PLATE LXII. FIG. II.

THIS is a very numerous and well known species, inhabiting our whole Atlantic coast from New England to Florida. It is designated by different names, such as the mud hen, clapper rail, meadow clapper, big rail, &c. Though occasionally found along the swampy shores and tide waters of our large rivers, its principal residence is in the salt marshes. It is a bird of passage, arriving on the coast of New Jersey about the 20th of April, and retiring again late in September. I suspect that many of them winter in the marshes of Georgia and Florida, having heard them very numerous at the mouth of Savannah river in the month of February. Coasters and fishermen often hear them while on their migrations, in spring, generally a little before day-break. The shores of New Jersey, within the beach, consisting of an immense extent of flat marsh, covered with a coarse reedy grass, and occasionally overflowed by the sea, by which it is also cut up into innumerable islands by narrow inlets, seem to be the favourite breeding place for these birds, as they are there acknowledged to be more than double in number to all other marsh fowl.

The clapper rail, or, as it is generally called, the mud hen, soon announces its arrival in the salt marshes, by its loud, harsh and incessant cackling, which very much resembles that of a Guinea fowl. This noise is most general during the night, and is said to be always

greatest before a storm. About the 20th of May, they generally commence laying and building at the same time; the first egg being usually dropt in a slight cavity, lined with a little dry grass pulled for the purpose, which, as the number of the eggs increase to their usual complement, ten, is gradually added to, until it rises to the height of twelve inches or more,—doubtless to secure it from the rising of the tides. Over this the long salt grass is artfully arched, and knit at top, to conceal it from the view above; but this very circumstance enables the experienced egg hunter to distinguish the spot at the distance of thirty or forty yards, though imperceptible to a common eye. The eggs are of a pale clay colour, sprinkled with small spots of dark red, and measure somewhat more than an inch and a half in length, by one inch in breadth, being rather obtuse at the small end. These eggs are exquisite eating, far surpassing those of the domestic hen. The height of laying is about the 1st of June, when the people of the neighbourhood go off to the marshes *an egging*, as it is called. So abundant are the nests of this species, and so dexterous some persons at finding them, that one hundred dozen of eggs have been collected by one man in a day. At this time, the crows, the minx, and the foxes, come in for their share; but, not content with the eggs, those last often seize and devour the parents also. The bones, feathers, wings, &c. of the poor mud hen lie in heaps near the hole of the minx; by which circumstance, however, he himself is often detected and destroyed.

These birds are also subject to another calamity of a more extensive kind: After the greater part of the eggs are laid, there sometimes happen violent northeast tempests, that drive a great sea into the bay, covering the whole marshes; so that at such times the rail may be seen in hundreds, floating over the marsh in great distress; many escape to the mainland; and vast numbers perish. On an occasion of this kind I have seen, at one view, thousands in a single meadow, walking about exposed and bewildered, while the dead

bodies of the females, who had perished on or near their nests, were strewed along the shore. This last circumstance proves how strong the ties of maternal affection is in these birds; for of the great numbers which I picked up and opened, not one male was to be found among them; all were females! Such as had not yet begun to sit probably escaped. These disasters do not prevent the survivors from recommencing the work of laying and building anew; and instances have occurred where their eggs have been twice destroyed by the sea; and yet in two weeks the eggs and nests seemed as numerous as ever.

The young of the clapper rail very much resemble those of the Virginian rail, except in being larger. On the 10th of August, I examined one of these young clapper rails, caught among the reeds in the Delaware, and apparently about three weeks old; it was covered with black down, with the exception of a spot of white on the auriculars, and a streak of the same along the side of the breast, belly, and fore part of the thigh; the legs were of a blackish slate colour; and the bill was marked with a spot of white near the point, and round the nostril. These run with great facility among the grass and reeds, and are taken with extreme difficulty.

The whole defence of this species seems to be in the nervous vigour of its limbs, and thin compressed form of its body, by which it is enabled to pass between the stalks of grass and reeds with great rapidity. There are also every where among the salt marshes covered ways, under the flat and matted grass, through which the rail makes its way like a rat, without a possibility of being seen. There is generally one or more of these from its nest to the water edge, by which it may escape unseen; and sometimes, if closely pressed, it will dive to the other side of the pond, gut, or inlet, rising and disappearing again with the silence and celerity of thought. In smooth water it swims tolerably well, but not fast; sitting high in the water, with its neck erect, and striking with great rapidity. When on shore, it runs with the neck extended, the tail erect,

and frequently flirled up. On fair ground, they run nearly as fast as a man; having myself, with great difficulty, caught some that were wing-broken. They have also the faculty of remaining under water for several minutes, clinging close, head downwards, by the roots of the grass. In a long stretch, they fly with great velocity, very much in the manner of a duck, with extended neck, and generally low; but such is their aversion to take wing, that you may traverse the marshes where there are hundreds of these birds, without seeing one of them; nor will they flush until they have led the dog through numerous labyrinths, and he is on the very point of seizing them.

The food of the clapper rail consists of small shell-fish, particularly those of the snail form, so abundant in the marshes; they also eat small crabs. Their flesh is dry, tastes sedgy, and will bear no comparison with that of the common rail. Early in October, they move off to the south; and though, even in winter, a solitary instance of one may sometimes be seen, yet these are generally such as have been weak or wounded, and unable to perform the journey.

The clapper rail measures fourteen inches in length, and eighteen in extent; the bill is two inches and a quarter long, slightly bent, pointed, grooved, and of a reddish brown colour; iris of the eye, dark red; nostril, oblong, pervious; crown, neck, and back, black, streaked with dingy brown; chin and line over the eye, brownish white; auriculars, dusky; neck before, and whole breast, of the same red brown as that of the preceding species; wing-coverts, dark chestnut; quill-feathers, plain dusky; legs, reddish brown; flanks and vent, black, tipped, or barred with white. The males and females are nearly alike.

The young birds of the first year have the upper parts of an olive brown, streaked with pale slate; wings, pale brown olive; chin and part of the throat, white; breast, ash colour, tinged with brown; legs and feet, a pale horn colour. Mr Pennant, and several other naturalists, appear to have taken their descriptions

from these imperfect specimens, the clapper rail being altogether unknown in Europe.

I have never met with any of these birds in the interior at a distance from lakes or rivers. I have also made diligent inquiry for them along the shores of Lakes Champlain and Ontario, but without success.

237. *RALLUS VIRGINIANUS*, LINNÆUS AND WILSON.

VIRGINIAN RAIL.

WILSON, PLATE LXII. FIG. 1.—EDINBURGH COLLEGE MUSEUM.

THIS species very much resembles the European water rail, (*rallus aquaticus*,) but is smaller, and has none of the slate or lead colour on the breast, which marks that of the old continent; its toes are also more than proportionably shorter, which, with a few other peculiarities, distinguish the species. It is far less numerous in this part of the United States than our common rail, and, as I apprehend, inhabits more remote northern regions. It is frequently seen along the borders of our salt marshes, which the other rarely visits; and also breeds there, as well as among the meadows that border our large rivers. It spreads over the interior as far west as the Ohio, having myself shot it in the barrens of Kentucky early in May. The people there observe them in wet places, in the groves, only in spring. It feeds less on vegetable, and more on animal, food than the common rail. During the months of September and October, when the reeds and wild oats swarm with the latter species, feeding on their nutritious seeds, a few of the present kind are occasionally found; but not one for five hundred of the others. The food of the present species consists of small snail shells, worms, and the larvæ of insects, which it extracts from the mud; hence the cause of its greater length of bill, to enable it the more readily to reach its food. On this account also, its flesh is much inferior to that of the other. In most of its habits, its thin compressed form

of body, its aversion to take wing, and the dexterity with which it runs or conceals itself among the grass and sedge, are exactly similar to those of the common rail, from which genus, notwithstanding the difference of its bill, it ought not to be separated.

This bird is known to some of the inhabitants along the sea-coast of New Jersey, by the name of the fresh-water mud hen, this last being the common appellation of the clapper rail, which the present species resembles in every thing but size. The epithet fresh-water is given it, because of its frequenting those parts of the marsh only where fresh water springs rise through the bogs into the salt marshes. In these places it usually constructs its nest, one of which, through the active exertions of my friend Mr Ord, while traversing with me the salt marshes of Cape May, we had the good fortune to discover. It was built in the bottom of a tuft of grass, in the midst of an almost impenetrable quagmire, and was composed altogether of old wet grass and rushes. The eggs had been floated out of the nest by the extraordinary rise of the tide in a violent north-east storm, and lay scattered about among the drift weed. The female, however, still lingered near the spot, to which she was so attached, as to suffer herself to be taken by hand. She doubtless intended to repair her nest, and commence laying anew; as, during the few hours that she was in our possession, she laid one egg, corresponding in all respects with the others. On examining those floated out of the nest, they contained young, perfectly formed, but dead. The usual number of eggs is from six to ten. They are shaped like those of the domestic hen, measuring one inch and two-tenths long, by very nearly half an inch in width, and are of a dirty white, or pale cream colour, sprinkled with specks of reddish and pale purple, most numerous near the great end. They commence laying early in May, and probably raise two brood in the season. I suspect this from the circumstance of Mr Ord having, late in the month of July, brought me several young ones of only a few days old, which were caught among the grass near

the border of the Delaware. The parent rail shewed great solicitude for their safety. They were wholly black, except a white spot on the bill; were covered with a fine down, and had a soft piping note. In the month of June of the same year, another pair of these birds began to breed amidst a boggy spring in one of Mr Bartram's meadows, but were unfortunately destroyed.

The Virginian rail is migratory, never wintering in the Northern or Middle States. It makes its first appearance in Pennsylvania early in May, and leaves the country on the first smart frosts, generally in November. I have no doubt but many of them linger in the low woods and marshes of the Southern States during winter.

This species is ten inches long, and fourteen inches in extent; bill, dusky red; cheeks and stripe over the eye, ash, over the lores and at the lower eyelid, white; iris of the eye, red; crown and whole upper parts, black, streaked with brown, the centre of each feather being black; wing-coverts, hazel brown, inclining to chestnut; quills, plain deep dusky; chin, white; throat, breast, and belly, orange brown; sides and vent, black, tipped with white; legs and feet, dull red brown; edge of the bend of the wing, white.

The female is about half an inch shorter, and differs from the male, in having the breast much paler; not of so bright a reddish brown; there is also more white on the chin and throat.

When seen, which is very rarely, these birds stand or run with the tail erect, which they frequently jerk upwards. They fly with the legs hanging, generally but a short distance; and the moment they alight, run off with great speed.

SUBGENUS II. — *CREX*, ILLIGER.238. *RALLUS CAROLINUS*, LINNÆUS AND WILSON.

CAROLINA RAIL.

WILSON, PLATE XLVIII. FIG. 1. — EDINBURGH COLLEGE MUSEUM.

OF all our land or water fowl, perhaps none afford the sportsman more agreeable amusement, or a more delicious repast, than the little bird now before us. This amusement is indeed temporary, lasting only two or three hours in the day for four or five weeks in each year; but, as it occurs in the most agreeable and temperate of our seasons, is attended with little or no fatigue to the gunner, and is frequently successful, it attracts numerous followers, and is pursued, in such places as the birds frequent, with great eagerness and enthusiasm.

The natural history of the rail, or, as it is called in Virginia, the sora, and in South Carolina the coot, is to the most of our sportsmen involved in profound and inexplicable mystery. It comes, they know not whence; and goes, they know not where. No one can detect their first moment of arrival; yet all at once the reedy shores, and grassy marshes, of our large rivers swarm with them, thousands being sometimes found within the space of a few acres. These, when they do venture on wing, seem to fly so feebly, and in such short fluttering flights among the reeds, as to render it highly improbable to most people that they could possibly make their way over an extensive tract of country. Yet, on the first smart frost that occurs, the whole suddenly disappear, as if they had never been.

To account for these extraordinary phenomena, it has been supposed by some that they bury themselves in the mud; but as this is every year dug into by ditchers and people employed in repairing the banks, without any of those sleepers being found, where but a few weeks before these birds were innumerable, this theory has been generally abandoned. And here their researches into this mysterious matter generally end in the common

exclamation of "What can become of them!" Some profound inquirers, however, not discouraged with these difficulties, have prosecuted their researches with more success; and one of those, living a few years ago near the mouth of James River in Virginia, where the rail or sora are extremely numerous, has (as I was informed on the spot) lately discovered that they change into frogs! having himself found in his meadows an animal of an extraordinary kind, that appeared to be neither a sora nor a frog, but, as he expressed it, "something between the two." He carried it to his negroes, and afterwards took it home, where it lived three days; and in his own and his negroes' opinion, it looked like nothing in this world but a real sora changing into a frog! What farther confirms this grand discovery is the well known circumstance of the frogs ceasing to hollow as soon as the sora comes in the fall.

This sagacious discoverer, however, like many others renowned in history, has found but few supporters, and, except his own negroes, has not, as far as I can learn, made a single convert to his opinion. Matters being so circumstanced, and some explanation necessary, I shall endeavour to throw a little more light on the subject by a simple detail of facts, leaving the reader to form his own theory as he pleases.

The rail or sora belongs to a genus of birds of which about thirty different species are enumerated by naturalists; and those are distributed over almost every region of the habitable parts of the earth. The general character of these is every where the same. They run swiftly, fly slowly, and usually with the legs hanging down; become extremely fat; are fond of concealment; and, wherever it is practicable, prefer running to flying. Most of them are migratory, and abound during the summer in certain countries, the inhabitants of which have very rarely an opportunity of seeing them. Of this last the land rail of Britain is a striking example. This bird, which during the summer months may be heard in almost every grass and clover field in the kingdom, uttering its common note *Crek, crek*, from

sunset to a late hour in the night, is yet unknown by sight to more than nine-tenths of the inhabitants. "Its well known cry," says Bewick, "is first heard as soon as the grass becomes long enough to shelter it, and continues till the grass is cut; but the bird is seldom seen, for it constantly skulks among the thickest part of the herbage, and runs so nimbly through it, winding and doubling in every direction, that it is difficult to come near it; when hard pushed by the dog, it sometimes stops short, and squats down, by which means its too eager pursuer overshoots the spot, and loses the trace. It seldom springs but when driven to extremity, and generally flies with its legs hanging down, but never to a great distance; as soon as it alights it runs off, and, before the fowler has reached the spot, the bird is at a considerable distance."* The water crake, or spotted rail of the same country, which in its plumage approaches nearer to our rail, is another notable example of the same general habit of the genus. "Its common abode," says the same writer, "is in low swampy grounds, in which are pools or streamlets overgrown with willows, reeds, and rushes, where it lurks and hides itself with great circumspection; it is wild, solitary, and shy, and will swim, dive, or skulk under any cover, and sometimes suffer itself to be knocked on the head, rather than rise before the sportsman and his dog." The water rail of the same country is equally noted for the like habits. In short, the whole genus possess this strong family character in a very remarkable degree.

These three species are well known to migrate into Britain early in spring, and to leave it for the more southern parts of Europe in autumn. Yet they are rarely or never seen on their passage to or from the countries where they are regularly found at different seasons of the year, and this for the very same reasons that they are so rarely seen even in the places where they inhabit.

It is not therefore at all surprising, that the regular migrations of the American rail or sora should in like

* BEWICK'S *British Birds*, vol. i, p. 308.

manner have escaped notice in a country like this, whose population bears so small a proportion to its extent, and where the study of natural history is so little attended to. But that these migrations do actually take place, from north to south, and *vice versa*, may be fairly inferred from the common practice of thousands of other species of birds less solicitous of concealment, and also from the following facts.

On the 22d day of February I killed two of these birds in the neighbourhood of Savannah in Georgia, where they have never been observed during the summer. On the 2d of the May following I shot another in a watery thicket below Philadelphia, between the rivers Schuylkill and Delaware, in what is usually called the Neck. This last was a male, in full plumage. We are also informed, that they arrive at Hudson's Bay early in June, and again leave that settlement for the south early in autumn. That many of them also remain here to breed is proven by the testimony of persons of credit and intelligence with whom I have conversed, both here and on James River in Virginia, who have seen their nests, eggs, and young. In the extensive meadows that border the Schuylkill and Delaware it was formerly common, before the country was so thickly settled there, to find young rail, in the first mowing time, among the grass. Mr James Bartram, brother to the botanist, a venerable and still active man of eighty-three, and well acquainted with this bird, says, that he has often seen and caught young rail in his own meadows in the month of June; he has also seen their nest, which he says is usually in a tussock of grass, is formed of a little dry grass, and has four or five eggs of a dirty whitish colour, with brown or blackish spots; the young run off as soon as they break the shell, are then quite black, and run about among the grass like mice. The old ones he has very rarely observed at that time, but the young often. Almost every old settler along these meadows with whom I have conversed, has occasionally seen young rail in mowing time; and all agree in describing them as covered with blackish down. There can, therefore,

be no reasonable doubt as to the residence of many of these birds, both here and to the northward, during the summer. That there can be as little doubt relative to their winter retreat, will appear more particularly towards the sequel of the present account. During their residence here, in summer, their manners exactly correspond with those of the water crake of Britain, so that, though actually a different species, their particular habits, common places of resort, and eagerness for concealment, are as nearly the same as the nature of the climates will admit.

Early in August, when the reeds along the shores of the Delaware have attained their full growth, the rail resort to them in great numbers to feed on the seeds of this plant, of which they, as well as the rice birds, and several others, are immoderately fond. These reeds, which appear to be the *zizania panicula effusa* of Linnæus, and the *zizania clavulosa* of Willdenow, grow up from the soft muddy shores of the tide water, which are alternately dry, and covered with four or five feet of water. They rise with an erect, tapering stem, to the height of eight or ten feet, being nearly as thick below as a man's wrist, and cover tracts along the river of many acres. The cattle feed on their long green leaves with avidity, and wade in after them as far as they dare safely venture. They grow up so close together, that, except at or near high water, a boat can with difficulty make its way through among them. The seeds are produced at the top of the plant, the blossoms or male parts occupying the lower branches of the panicle, and the seeds the higher. These seeds are nearly as long as a common sized pin, somewhat more slender, white, sweet to the taste, and very nutritive, as appears by their effects on the various birds that at this season feed on them.

When the reeds are in this state, and even while in blossom, the rail are found to have taken possession of them in great numbers. These are generally numerous in proportion to the full and promising crop of the former. As you walk along the embankment of the

river at this season, you hear them squeaking in every direction like young puppies; if a stone be thrown among the reeds, there is a general outcry, and a reiterated *kuk, kuk, kuk*, something like that of a guinea fowl. Any sudden noise, or the discharge of a gun, produces the same effect. In the mean time none are to be seen, unless it be at or near high water; for, when the tide is low, they universally secrete themselves among the interstices of the reeds, and you may walk past, and even over them, where there are hundreds, without seeing a single individual. On their first arrival, they are generally lean, and unfit for the table; but, as the reeds ripen, they rapidly fatten, and, from the 20th of September to the middle of October, are excellent, and eagerly sought after. The usual method of shooting them, in this quarter of the country, is as follows:—The sportsman furnishes himself with a light batteau, and a stout experienced boatman, with a pole of twelve or fifteen feet long, thickened at the lower end to prevent it from sinking too deep into the mud. About two hours or so before high water, they enter the reeds, and each takes his post, the sportsman standing in the bow ready for action, the boatman, on the stern seat, pushing her steadily through the reeds. The rail generally spring singly, as the boat advances, and at a short distance ahead, are instantly shot down, while the boatman, keeping his eye on the spot where the bird fell, directs the boat forward and picks it up as the gunner is loading. It is also the boatman's business to keep a sharp look-out, and give the word "Mark!" when a rail springs on either side without being observed by the sportsman, and to note the exact spot where it falls until he has picked it up; for this once lost sight of, owing to the sameness in the appearance of the reeds, is seldom found again. In this manner the boat moves steadily through and over the reeds, the birds flushing and falling, the gunner loading and firing, while the boatman is pushing and picking up. The sport continues till an hour or two after high water, when the shallowness of the water, and the strength and weight of the

floating reeds, as also the backwardness of the game to spring as the tide decreases, oblige them to return. Several boats are sometimes within a short distance of each other, and a perpetual cracking of musketry prevails along the whole reedy shores of the river. In these excursions it is not uncommon for an active and expert marksman to kill ten or twelve dozen in a tide. They are usually shot singly, though I have known five killed at one discharge of a double-barrelled piece. These instances, however, are rare.

The flight of these birds among the reeds is usually low; and, shelter being abundant, is rarely extended to more than fifty or one hundred yards. When winged and uninjured in their legs, they swim and dive with great rapidity, and are seldom seen to rise again. I have several times, on such occasions, discovered them clinging with their feet to the reeds under the water, and at other times skulking under the floating reeds, with their bill just above the surface. Sometimes, when wounded, they dive, and, rising under the gunwale of the boat, secrete themselves there, moving round as the boat moves, until they have an opportunity of escaping unnoticed. They are feeble and delicate in every thing but the legs, which seem to possess great vigour and energy, and their bodies being so remarkably thin, or compressed, as to be less than an inch and a quarter through transversely, they are enabled to pass between the reeds like rats. When seen, they are almost constantly jetting up the tail. Yet, though their flight among the reeds seems feeble and fluttering, every sportsman who is acquainted with them here must have seen them occasionally rising to a considerable height, stretching out their legs behind them, and flying rapidly across the river where it is more than a mile in width.

Such is the mode of rail shooting in the neighbourhood of Philadelphia. In Virginia, particularly along the shores of James River within the tide water, where the rail, or sora, are in prodigious numbers, they are also shot on the wing, but more usually taken at night in the following manner: A kind of iron grate is fixed

on the top of a stout pole, which is placed like a mast, in a light canoe, and filled with fire. The darker the night the more successful is the sport. The person who manages the canoe is provided with a light paddle ten or twelve feet in length, and, about an hour before high water, proceeds through among the reeds, which lie broken and floating on the surface. The whole space for a considerable way round the canoe is completely enlightened; the birds stare with astonishment, and, as they appear, are knocked on the head with the paddle, and thrown into the canoe. In this manner from twenty to eighty dozen have been killed by three negroes in the short space of three hours!

At the same season, or a little earlier, they are very numerous in the lagoons near Detroit on our northern frontiers, where another species of reed (of which they are equally fond) grows in shallows in great abundance. Gentlemen who have shot them there, and on whose judgment I can rely, assure me, that they differ in nothing from those they have usually killed on the shores of the Delaware and Schuylkill; they are equally fat, and exquisite eating. On the sea coast of New Jersey, where these reeds are not to be found, this bird is altogether unknown; though along the marshes of Maurice river, and other tributary streams of the Delaware, and, wherever the reeds abound, the rail are sure to be found also. Most of them leave Pennsylvania before the end of October, and the Southern States early in November, though numbers linger in the warm southern marshes the whole winter. A very worthy gentleman, Mr Harrison, who lives in Kittiwau, near a creek of that name, on the borders of James River, informed me, that in burning his meadows early in March, they generally raise and destroy several of these birds. That the great body of these rail winter in countries beyond the United States, is rendered highly probable from their being so frequently met with at sea, between our shores and the West India islands. A Captain Douglas informed me, that on his voyage from St Domingo to Philadelphia, and more than a hundred

miles from the capes of the Delaware, one night the man at the helm was alarmed by a sudden crash on deck that broke the glass in the binnacle, and put out the light. On examining into the cause, three rail were found on deck, two of which were killed on the spot, and the other died soon after. The late Bishop Madison, president of William and Mary College, Virginia, assured me, that a Mr Skipwith, for some time our consul in Europe, on his return to the United States, when upwards of three hundred miles from the capes of the Chesapeake, several rail or soras, I think five or six, came on board, and were caught by the people. Mr Skipwith, being well acquainted with the bird, assured him that they were the very same with those usually killed on James river. I have received like assurances from several other gentlemen and captains of vessels who have met with these birds between the mainland and the islands, so as to leave no doubt on my mind of the fact. For why should it be considered incredible that a bird which can both swim and dive well, and at pleasure fly with great rapidity, as I have myself frequently witnessed, should be incapable of migrating, like so many others, over extensive tracts of land or sea? Inhabiting, as they do, the remote regions of Hudson's Bay, where it is impossible they could subsist during the rigours of their winter, they must either emigrate from thence or perish; and as the same places in Pennsylvania which abound with them in October are often laid under ice and snow during the winter, it is as impossible that they could exist here in that inclement season; Heaven has therefore given them, in common with many others, certain prescience of these circumstances, and judgment, as well as strength of flight, sufficient to seek more genial climates abounding with their suitable food.

The rail is nine inches long, and fourteen inches in extent; bill, yellow, blackish towards the point; lores, front, crown, chin, and stripe down the throat, black; line over the eye, cheeks, and breast, fine light ash sides of the crown, neck, and upper parts generally,

olive brown, streaked with black, and also with long lines of pure white, the feathers being centred with black on a brown olive ground, and edged with white; these touches of white are shorter near the shoulder of the wing, lengthening as they descend; wing, plain olive brown; tertials, streaked with black and long lines of white; tail, pointed, dusky olive brown, centred with black; the four middle feathers bordered for half their length with lines of white; lower part of the breast marked with semicircular lines of white on a light ash ground; belly, white; sides under the wings, deep olive, barred with black, white, and reddish buff; vent, brownish buff; legs, feet, and naked part of the thighs, yellowish green; exterior edge of the wing, white; eyes, reddish hazel.

The females, and young of the first season, have the throat white, the breast pale brown, and little or no black on the head. The males may always be distinguished by their ashy blue breasts and black throats.

During the greater part of the months of September and October the market of Philadelphia is abundantly supplied with rail, which are sold from half a dollar to a dollar a dozen. Soon after the 20th of October, at which time our first smart frosts generally take place, these birds move off to the south. In Virginia they usually remain until the first week in November.

Since the above was written, I have received from Mr George Ord of Philadelphia, some curious particulars relative to this bird, which, as they are new, and come from a gentleman of respectability, well known for his dexterity at rail shooting, are worthy of being recorded, and merit farther investigation.

“My personal experience,” says Mr Ord, “has made me acquainted with a fact in the history of the rail, which perhaps is not generally known, and I shall, as briefly as possible, communicate it to you. Some time in the autumn of the year 1809, as I was walking in a yard, after a severe shower of rain, I perceived the feet of a bird projecting from a spout. I pulled it out, and

discovered it to be a rail, very vigorous, and in perfect health. The bird was placed in a small room, on a gincase, and I was amusing myself with it, when, in the act of pointing my finger at it, it suddenly sprang forward, apparently much irritated, fell to the floor, and, stretching out its feet, and bending its neck until the head nearly touched the back, became to all appearance lifeless. Thinking the fall had killed the bird, I took it up, and began to lament my rashness in provoking it. In a few minutes it again breathed, and it was some time before it perfectly recovered from the fit, into which, it now appeared evident, it had fallen. I placed the rail in a room, wherein canary birds were confined, and resolved that, on the succeeding day, I would endeavour to discover whether or no the passion of anger had produced the fit. I entered the room at the appointed time, and approached the bird, which had retired, on beholding me, in a sullen humour, to a corner. On pointing my finger at it, its feathers were immediately ruffled, and in an instant it sprang forward, as in the first instance, and fell into a similar fit. The following day the experiment was repeated with the like effect. In the fall of 1811, as I was gunning amongst the reeds in pursuit of rail, I perceived one rise but a few feet before my batteau. The bird had risen about a yard when it became entangled in the tops of a small bunch of reeds, and immediately fell. Its feet and neck were extended, as in the instance above mentioned, and, before it had time to recover, I killed it. Some few days afterwards, as a friend and I were gunning in the same place, he shot a rail, and, as we approached the spot to pick it up, another was perceived, not a foot off, in a fit. I took up the bird, and placed it in the crown of my hat. In a few moments it revived, and was as vigorous as ever. These facts go to prove, that the rail is subject to gusts of passion, which operate to so violent a degree as to produce a disease, similar in its effects to epilepsy. I leave the explication of the phenomenon, to those physiologists who are competent and willing to investigate it. It may be worthy of remark, that

the birds affected as described, were all females of the *rallus Virginianus*, or common rail.

“The rail, though generally reputed a simple bird, will sometimes manifest symptoms of considerable intelligence. To those acquainted with rail shooting, it is hardly necessary to mention, that the tide, in its flux, is considered an almost indispensable auxiliary; for, when the water is off the marsh, the lubricity of the mud, the height and compactness of the reed, and the swiftness of foot of the game, tend to weary the sportsman and to frustrate his endeavours. Even should he succeed in a tolerable degree, the reward is not commensurate to the labour. I have entered the marsh in a batteau at a common tide, and in a well known haunt have beheld but few birds. The next better tide, on resorting to the same spot, I have perceived abundance of game. The fact is, the rail dive, and conceal themselves beneath the fallen reed, merely projecting their heads above the surface of the water for air, and remain in that situation until the sportsman has passed them; and it is well known, that it is a common practice with wounded rail to dive to the bottom, and, holding upon some vegetable substance, support themselves in that situation until exhausted. During such times the bird, in escaping from one enemy, has often to encounter another not less formidable. Eels and cat-fish swarm in every direction prowling for prey, and it is ten to one if a wounded rail escapes them. I myself have beheld a large eel make off with a bird that I had shot, before I had time to pick it up; and one of my boys, in bobbing for eels, caught one with a whole rail in its belly.

“I have heard it observed, that on the increase of the moon the rail improves in fatness, and decreases in a considerable degree with that planet. Sometimes I have conceived that the remark was just. If it be a fact, I think it may be explained on the supposition that the bird is enabled to feed at night, as well as by day, while it has the benefit of the moon, and with less interruption than at other periods.”

GENUS LV.—*GALLINULA*, BRISSON.239. *GALLINULA MARTINICA*, LATHAM.*GALLINULA PORPHYRIO*, WILSON. — MARTINICO GALLINULE. *

WILSON, PLATE LXXIII. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THIS splendid bird is a native of the southern parts of the continent of North America. I have never learnt that it migrates as far north as Virginia, though it is probable that it may be occasionally seen in that State. It makes its appearance, in the Sea Islands of Georgia, in the latter part of April, and, after spending the summer, it departs, with its young, in the autumn. The marshes of Mexico appear to be its winter residence. It frequents the rice fields and fresh water ponds, in company with the common gallinule; but the latter, being of a more hardy nature, remains all winter both in Georgia and Florida.

During its migration this bird is frequently driven to sea; and I have known two or three instances of its having sought refuge on board of vessels. On the 24th May, 1824, a brig arrived at Philadelphia, from New Orleans, bringing a fine living specimen, which had flown on board of her in the Gulf stream. This bird is now [1825] alive in the Philadelphia Museum. In the month of August, 1818, a storm drove another individual on board of a vessel, in her passage from Savannah to Philadelphia. This also lived for some time in Peale's Museum.

The Martinico gallinule is a vigorous and active bird. It bites hard, and is quite expert in the use of its feet. When it seizes upon any substance with its toes, it requires a considerable effort to disengage it. Its toes are long, and spread greatly. It runs with swiftness; and, when walking, it jerks its tail in the manner of the common rail. Its manners and food are somewhat similar to those of the far famed purple gallinule, whose

* Named in the plate, Purple Gallinule. The description of the bird is written by Mr Ord.

history is so beautifully detailed in the works of Buffon.

In its native haunts, it is vigilant and shy; and it is not easy to spring it, without the assistance of a dog.

Length, from the tip of the bill to the end of the tail, fourteen inches; bill, an inch and a quarter long, vermilion, greenish yellow at the tip; irides, pale cornelian; naked crown, dull azure; head, part of the neck, throat, and breast, of a rich violet purple; back and scapulars, olive green; rump, tail, and its coverts, brownish green; sides of the neck, and wings, ultramarine, the latter tinged with green; shoulders of wings, rich azure; inner webs of the quills and tail-feathers, dusky brown; belly and thighs, dull purplish black; vent, pure white; tail, rounded; legs and feet, greenish yellow; claws, long, sharp, and of a pale flesh colour; span of the foot, five inches.

GENUS LVI.—*FULICA*, LINNÆUS.

240. *FULICA AMERICANA*, GMELIN.—*FULICA ATRA*, WILSON.

CINEREOUS COOT. *

WILSON, PLATE LXXIII. FIG. 1. — EDINBURGH COLLEGE MUSEUM.

THIS species makes its appearance in Pennsylvania about the first of October. Among the muddy flats and islands of the river Delaware, which are periodically overflowed, and which are overgrown with the reed or wild oats, and rushes, the coots are found. They are not numerous, and are seldom seen, except their places of resort be covered with water; in that case they are generally found sitting on the fallen reed, waiting for the ebbing of the tide, which will enable them to feed. Their food consists of various aquatic plants, seeds, insects, and, it is said, small fish. The coot has an aversion to take wing, and can seldom be sprung in its retreat at low water: for, although it walks rather

* Named in the plate, Common Coot. The description of the bird is written by Mr Ord.

awkwardly, yet it contrives to skulk through the grass and reeds with great speed, the compressed form of its body, like that of the rail genus, being well adapted to the purpose. It swims remarkably well, and, when wounded, will dive like a duck. When closely pursued in the water, it generally takes to the shore, rising with apparent reluctance, like a wounded duck, and fluttering along the surface with its feet pattering on the water.* It is known in Pennsylvania by the name of the mud-hen.

I have never yet discovered that this species breeds with us; though it is highly probable that some few may occupy the marshes of the interior, in the vicinity of the ponds and lakes, for this purpose: those retired situations being well adapted to the hatching and rearing of their young. In the Southern States, particularly South Carolina, they are well known; but the Floridas appear to be their principal rendezvous for the business of incubation. "The coot," says William Bartram, "is a native of North America, from Pennsylvania to Florida. They inhabit large rivers, fresh water inlets or bays, lagoons, &c. where they swim and feed amongst the reeds and grass of the shores; particularly in the river St Juan, in East Florida; where they are found in immense flocks. They are loquacious and noisy, talking to one another night and day; are constantly on the water, the broad lobated membranes on their toes enabling them to swim and dive like ducks."†

I observed this species to be numerous, during the winter, in the fresh water ponds, situated in the vicinity of the river St Juan, or St John, in East Florida; but I did not see them in the river. The food which they obtain in these places must be very abundant and nutritious, as the individuals which I shot were excessively fat. One male specimen weighed twenty-four ounces avoirdupois. They associate with the common

* In Carolina, they are called Flusterers, from the noise they make in flying along the surface of the water. — *A Voyage to Carolina*, by JOHN LAWSON, p. 149.

† Letter from Mr Bartram to the author.

gallinule (*gallinula chloropus*;) but there is not, perhaps, one of the latter, for twenty of the former.

The cinereous coot is sixteen inches in length, and twenty-eight in extent; bill, one and a half inch long, white, the upper mandible slightly notched near the tip, and marked across with a band of chestnut, the lower mandible marked on each side with a squarish spot of the like colour, edged on the lower part with bright yellow or gamboge, thence to the tip, pale horn colour; membrane of the forehead, dark chestnut brown; irides, cornelian red; beneath the eyes, in most specimens, a whitish spot; the head and neck are of a deep shining black, resembling satin; back and scapulars, dirty greenish olive; shoulders, breast, and wing-coverts, slate blue; the under parts are hoary; vent, black; beneath the tail, pure white; primaries and secondaries, slate, the former tipped with black, the latter with white, which does not appear when the wing is closed; outer edges of the wings, white; legs and toes, yellowish green, the scalloped membrane of the latter, lead colour; middle toe, including the claw, three inches and three quarters long.

The bird from which the foregoing description was taken, was shot in the Delaware, below Philadelphia, the 29th of October, 1813. It was an old male, an uncommonly fine specimen, and weighed twenty-three ounces avoirdupois. It is deposited in Peale's Museum.

The young birds differ somewhat in their plumage, that of the head and neck being of a brownish black; that of the breast and shoulders, pale ash; the throat, gray or mottled; the bill, bluish white; and the membrane on the forehead, considerably smaller.

The young females very much resemble the young males; all the difference which I have been enabled to perceive, is as follows:—breast and shoulders, cinereous; markings on the bill, less; upper parts of the head, in some specimens, mottled; and being less in size.

The lower parts of these birds are clothed with a thick down, and, particularly between the thighs,

covered with close fine feathers. The thighs are placed far behind, are fleshy, strong, and bare above the knees.

The gizzard resembles a hen's, and is remarkably large and muscular. That of the bird which has been described was filled with sand, gravel, shells, and the remains of aquatic plants.

Buffon describes the mode of shooting coots in France, particularly in Lorraine, on the great pools of Tiaucourt, and of Indre; hence we are led to suppose, that they are esteemed as an article of food. But with us, who are enabled, by the abundance and variety of game, to indulge in greater luxuries in that season when our coots visit us, they are considered as of no account, and are seldom eaten.

The European ornithologists represent the membrane on the forehead of the *fulica atra* as white, except in the breeding season, when it is said to change its colour to pale red. In every specimen of the cinereous coot which I have seen, except one, the membrane of the forehead was of a dark chestnut brown colour. The one alluded to was a fine adult male, shot in the Delaware, at Philadelphia, on the 11th of May: the membrane was of a pure white; no white marking beneath the eye; legs and feet of a bright grass green.

In Wilson's figure of the coot, there are some slight errors: the auriculars are designated, which should not have been done, as they are not distinguishable from the rest of the plumage of the head and neck, which is all of a fine satiny texture; and the outline of the bill is not correct.

Latham states, that the common European coot (*f. atra*) is "met with in Jamaica, Carolina, and other parts of North America." This, I presume, is a mistake, as I have never seen but one species of coot in the United States. Brown, in speaking of the birds of Jamaica, mentions a coot, which, in all probability, is the same as ours. The coot mentioned by Sloane is the common gallinule. So is also that spoken of in the *Natural History of Barbadoes*, by Hughes, p. 71.

In Lewis and Clark's history of their expedition, mention is made of a bird which is common on the Columbia; is said to be very noisy, to have a sharp, shrill whistle, and to associate in large flocks; it is called the black duck.* This is doubtless a species of coot, but whether or not different from ours cannot be ascertained. How much is it to be regretted, that, in an expedition of discovery, planned and fitted out by an enlightened government, furnished with every means for safety, subsistence, and research, not one naturalist, not one draftsman, should have been sent, to observe and perpetuate the infinite variety of natural productions, many of which are entirely unknown to the community of science, which that extensive tour must have revealed!

The coot leaves us in November for the southward.

The foregoing was prepared for the press, when the author, in one of his shooting excursions on the Delaware, had the good fortune to kill a full plumaged female coot. This was on the 20th of April. It was swimming at the edge of a *cripple*, or thicket of alder bushes, busily engaged in picking something from the surface of the water, and, while thus employed, it turned frequently. The membrane on its forehead was very small, and edged on the fore part with gamboge. Its eggs were of the size of partridge shot. And on the 13th of May, another fine female specimen was presented to him, which agreed with the above, with the exception of the membrane on the forehead being nearly as large and prominent as that of the male. From the circumstance of the eggs of all these birds being very small, it is probable that the coots do not breed until July.

* *History of the Expedition*, vol. ii, p. 194. Under date of November 30th, 1805, they say: "The hunters brought in a few black ducks of a species common in the United States, living in large flocks, and feeding on grass: they are distinguished by a sharp white beak, toes separated, and by having no claw."

FAMILY XXII.

PINNATIPEDES, BRISSON.

GENUS LVII. — *PHALAROPUS*, BRISSON

SUBGENUS I. *PHALAROPUS*, CUVIER.

241. *PHALAROPUS FULICARNIS*, BONAPARTE. — *PHALAROPUS*

HYPERBOREUS, WILSON. — BROWN PHALAROPE.*

WILSON, PLATE LXXIII. FIG. III.

Of this species only one specimen was ever seen by Wilson, and that was preserved in Trowbridge's Museum, at Albany, in the State of New York. On referring to Wilson's Journal, I found an account of the bird, there called a *tringa*, written with a lead pencil, but so scrawled and obscured that parts of the writing were not legible. I wrote to Mr Trowbridge, soliciting a particular description; but no answer was returned. However, having had the good fortune, since publishing the first edition, of examining a fine recent specimen of this rare bird, I hope I shall be enabled to fix the species by such characters as will prevent any ornithologist in future from confounding it with the species which follows,—two birds, which, owing to a want of precision, were involved in almost inextricable confusion, until Temminck applied himself to the task of disembroiling them; and this ingenious naturalist has fully proved that the seven species of authors constituted, in effect, only two species.

Temminck's distinctive characters are drawn from the bill; and he has divided the genus into two sections,—an arrangement of which, the utility is not evident, seeing that each section contains but one species, unless we may consider the barred phalarope of

* Named in the plate, Gray Phalarope. The description of the bird is written by Mr Ord.

Latham constitutes a third, a point not yet ascertained, and not easy to be settled for the want of characters.

In my examination of these birds I have paid particular attention to the feet, which possess characters equally striking with those of the bill; hence a union of all these will afford a facility to the student, of which he will be fully sensible when he makes them the subject of his investigation.

Our figure of this species betrays all the marks of haste; it is inaccurately drawn and imperfectly coloured; notwithstanding, by a diligent study of it, I have been enabled to ascertain that it is the coot-footed tringa of Edwards, plate 46 and 143, to which bird Linnæus gave the specific denomination of *lobata*. In the twelfth edition of the *Systema Naturæ*, the Swedish naturalist, conceiving that he might have been in error, omitted, in his description of the *lobata*, the synonyme of Edwards's cock coot-footed tringa, No. 143, and recorded the latter bird under the name of *hyperborea*,—a specific appellation, which Temminck and other ornithologists have sanctioned, but which the laws of methodical nomenclature prohibit us from adopting, as, beyond all question, *hyperborea* is only a synonyme of *lobata*, which has the priority, and must stand.

M. Temminck differs from us in the opinion that the *T. lobata* of Gmelin, vol. i, p. 674, is the present species, and refers it to that which follows. But, if this respectable ornithologist will take the trouble to look into the twelfth edition of Linnæus, vol. i, p. 249, No. 8, he will there find two false references, Edwards's No. 308, and Brisson's No. 1, which gave rise to Gmelin's confusion of synonymes, and a consequent confusion in his description, as, the essential character in both authors being nearly in the same words, (*rostrum subulato, apice inflexo, &c.*) we are at no loss to infer that both descriptions have reference to the same bird; and we are certain that the *lobata* of the twelfth edition of the former is precisely the same as that of the tenth

edition, which cites for authority Edwards's 46 and 143, as before mentioned.

I shall now give the short description of the bird as I find it in Wilson's Note Book :—

Bill, black, slender, and one inch and three-eighths. In the original the bill is said to be one inch and three quarters long ; but that this is a mistake, we have only to measure the bill of the figure, drawn of half the size of nature, to be convinced of. Wilson always measured his bills from the tip to the angle of the mouth. Our figure, by this admeasurement, indicates a bill of precisely the length of that of Peale's specimen, which I have described in detail. In length, lores, front, crown, hindhead, and thence to the back, very pale ash, nearly white ; from the anterior angle of the eye, a curving stripe of black descends along the neck for an inch or more, thence to the shoulders, dark reddish brown, which also tinges the white on the side of the neck next to it ; under parts, white ; above, dark olive ; wings and legs, black. Size of the turnstone.

The specimen from which the following description was taken, was kindly communicated to me by my friend Mr Titian R. Peale, while it was yet in a recent state, and before it was prepared for the museum. It was this individual which enabled me to ascertain the species figured by Wilson. It was shot in the neighbourhood of Philadelphia, on the 7th of May, 1818.

Bill, narrow, slender, flexible, subulate, of equal width ; nostrils, basal, and linear ; lobes of the toes, thick, narrow, and but slightly scalloped. Outer toe, connected to the middle one as far as the first joint ; inner toe, divided nearly to its base ; hind toe, resting on the ground. Bill, black, one inch and three-eighths in length ; head above, of an ash gray ; hindhead, whitish, which colour extends a short distance down the neck ; over the eyes, a white stripe, below them, a white spot ; throat and lower parts, white ; a line of black passes through the eyes, spreads out towards the hindhead, and descends along the neck ; lower part of the neck,

pale ferruginous; back part of the neck, deep ferruginous, which descends on each side, and mingles with the plumage of the back and scapulars, which are of a clove brown, the feathers tipped with whitish; wings and tail, dark clove brown, some of the lesser coverts having a reddish tinge; the upper tail-feathers, tinged with red at their tips, the under feathers, marked with white on their inner webs; irides, dark brown; legs and feet, dark plumbeous; claws, long, of a dark horn colour; hind toe, independent of the claw, five sixteenths of an inch long; the tertials, when the wing is closed, extend to within three-eighths of an inch of the tip of the primaries; weight, an ounce and three-quarters; length, nine inches and a half; breadth, sixteen inches. This was a female; her eggs very small.

In the grand chain of animated nature, the phalaropes constitute one of the links between the waders and the web-footed tribes, having the form of the sandpipers, with some of the habits of the gulls; the scalloped membranes on their toes enabling them to swim with facility. They are clothed with a thick coat of feathers, beneath which, as in the ducks, lies a mass of down, to protect them from the rigours of the northern climates, of which they are natives. They do not appear to be fond of the neighbourhood of the ocean, and are generally found in the interior, about the lakes, ponds, and streams of fresh water, where they delight to linger, swimming near the margin in search of seeds and insects. They are nowhere numerous, are commonly seen in pairs, and are so extremely tame and unsuspicious, that one may approach to within a few feet of them.

The genus *lobipes* of the Baron Cuvier is founded upon this species; and it must be confessed that its characters are sufficiently distinct from those of the bird which follows, to authorize such a separation; but unless some new species should be discovered, we see no impropriety in associating the two birds already known, taking care, however, to preserve a consistency

in the generic characters, which Temminck, in his *Manuel*, has not sufficiently observed.

In the Appendix to Montague's *Supplement to the Ornithological Dictionary*, we find the following remarks on this species, there named *fulcaria*:—"We have before mentioned that this bird had been observed in the Orkneys in considerable abundance in the summer, and that no doubts were entertained of its breeding there, although the nest had not been found. To Mr Bullock, therefore, we are indebted for the farther elucidation of the natural history of this elegant little bird. In a letter to the author, this gentleman says, 'I found the red phalarope common in the marshes of Sanda and Westra, in the breeding season, but which it leaves in the autumn. This bird is so extremely tame, that I killed nine without moving out of the same spot, being not in the least alarmed at the report of a gun. It lays four eggs, of the shape of that of a snipe, but much less, of an olive colour, blotched with dusky. It swims with the greatest ease, and, when on the water, looks like a beautiful miniature of a duck, carrying its head close to the back, in the manner of a teal.' Mr Bullock farther observes, 'That the plumage of the female is much lighter, and has less of the rufous than the other sex.'"

SUBGENUS II. — *LOBIPES*, CUVIER.

242. *PHALAROPUS FULCARIUS*, WILSON. — GRAY PHALAROPE. *

WILSON, PLATE LXVIII. FIG. IV.

BILL, pretty stout and wide, slightly compressed at the tip, depressed on the lower half; upper mandible, carinate; nostrils, subovate, a short distance from the base; feet, semipalmate, lobes of the toes, broad and greatly scalloped, hind toe, barely touching the ground. Bill, reddish orange at the base, the remainder black, an

* Named in the plate, Red Phalarope.

inch long; front and crown, black, barred transversely with lines of white; throat, sides of the neck, and lower parts, white, thickly and irregularly barred with curving dashes of reddish chocolate; upper parts, of a deep cinereous blue, streaked with brownish yellow and black; the back scapulars, broadly edged with brownish yellow; wings and rump, dark cinereous; greater wing-coverts, broadly tipped with white, forming a large band; primaries, nearly black, and crossed with white below their coverts; tail, plain olive, middle of its coverts black, their sides bright brownish yellow; vent, white, those feathers immediately next to the tail, reddish chocolate; legs, black on the outside, yellowish within. Length nine inches, breadth fifteen inches and a half; length of hind toe, independent of the claw, one-eighth of an inch. Male. The inner toe is connected to the middle one by a membrane as far as the first joint, the outer toe much farther: hence the feet may be properly termed semipalmate; webs and lobes, finely pectinated. This conformation of the feet is pretty accurately exhibited in Edwards's plate, No. 308. The gray phalarope is a rare bird in Pennsylvania, and is not often met with in any part of the United States. The individual from which our description was taken, was shot in a pond in the vicinity of Philadelphia, in the latter part of May, 1812. There were three in company. The person who shot it had never seen one of the species before, and was struck with their singular manners. He described them as swimming actively near the margin of the pond, dipping in their bill very often, as if feeding, and turning frequently. In consequence of our specimen being in a state of putridity when received, it was preserved with considerable difficulty, and the sex could not be ascertained.

In the spring of the year 1816, my friend, Mr Le Sueur, shot, in Boston Bay, a young individual of this species: crown, dark slate, tinged with yellowish brown; front, throat, line over the eye, belly, and vent, white; shoulders, breast, and sides, tawny or fawn colour; back, dark slate, paler near the rump, the feathers edged

with bright yellow ochre ; wings, pale cinereous, some of the lesser coverts edged with white, the greater coverts largely so, forming the bar ; primaries and tail, black ; the latter edged with yellowish brown, the shafts of the former white ; bill and feet, as in the first described.

On the 20th of March, 1818, I shot, in the river St John, in East Florida, an immature female specimen ; irides, dark brown ; around the base of the bill, a slight marking of dark slate ; front and crown, white, mottled with pale ash ; at the interior part of each eye, a black spot ; beneath the eyes, dark slate, which extends over the auriculars, the hindhead, and upper part of the neck ; upper parts, cinereous gray, with a few faint streaks of slate ; throat, breast, whole lower parts, and under tail-coverts, pure white ; flanks, with a few faint ferruginous stains ; wings, slate brown, the coverts of the secondaries, and a few of the primary coverts, largely tipped with white, forming the bar as usual ; tail, brown, edged with cinereous ; legs and feet, pale plumbeous ; the webs, and part of the scalloped membranes, yellowish ; bill and size as in the first specimen.

The tongue of this species is large, fleshy, and obtuse.

This bird has been described under a variety of names. What could induce that respectable naturalist, M. Temminck, to give it a new appellation, we are totally at a loss to conceive. That his name (*Phalaropus platyrhynchus*) is good,—that it is even better than all the rest, we are willing to admit,—but that he had no right to give it a new name we shall boldly maintain, not only on the score of expediency, but of justice. If the right to change be once conceded, there is no calculating the extent of the confusion in which the whole system of nomenclature will be involved ; the study of methodical natural history is sufficiently laborious, and whatever will have a tendency to diminish this labour ought to meet the cordial support of all those who are interested in the advancement of the natural sciences.

“ The study of natural history,” says the present

learned president of the Linnæan Society, "is, from the multitude of objects with which it is conversant, necessarily so encumbered with names, that students require every possible assistance to facilitate the attainment of those names, and have a just right to complain of every needless impediment. Nor is it allowable to alter such names, even for the better. In our science, the names established throughout the works of Linnæus are become current coin, nor can they be altered without great inconvenience."*

That there is a property in names, as well as in things, will not be disputed; and there are few naturalists who would not feel as sensibly a fraud committed on their nomenclature as on their purse. The ardour with which the student pursues his researches, and the solicitude which he manifests in promulgating his discoveries under appropriate appellations, are proofs that at least part of his gratification is derived from the supposed distinction which a name will confer upon him; deprive him of this distinction, and you inflict a wound upon his self-love which will not readily be healed.

To enter into a train of reasoning to prove that he who first describes and names a subject of natural history, agreeable to the laws of systematic classification, is for ever entitled to his name, and that it cannot be superseded without injustice, would be useless, because they are propositions which all naturalists deem self-evident. Then how comes it, whilst we are so tenacious of our own rights we so often disregard those of others?

I would now come to the point. It will be perceived that I have ventured to restore the long neglected name of *fulcra*. That I shall be supported in this restoration I have little doubt, when it shall have been made manifest that it was Linnæus himself who first named this species. A reference to the tenth edition of the

* *An Introduction to Physiological and Systematical Botany*, chap. 12.

*Systema Naturæ** will shew that the authority for *tringa fulicaria* is Edwards's red coot-footed tringa, pl. 142, and that alone, for it does not appear that Linnæus had seen the bird. The circumstance of the change of the generic appellation can in nowise affect the specific name; the present improved state of the science requires the former, justice demands that the latter should be preserved. In this work I have preserved it; and I flatter myself that this humble attempt to vindicate the rights of Linnæus will be approved by all those who love the sciences of which he was so illustrious a promoter.

* Of all the editions of the *Systema Naturæ*, the tenth and the twelfth are the most valuable; the former being the first which contains the *synonyma*, and the latter being that which received the finishing hand of its author. In the United States, Linnæus is principally known through two editors. Gmelin, whose thirteenth edition of the *Systema Naturæ* has involved the whole science in almost inextricable confusion; and Turton, whose English translation of Gmelin is a disgrace to science and letters. All writers on zoology and botany should possess Linnæus's tenth and twelfth editions; they will be found to be of indispensable use in tracing synonyms and fixing nomenclature.

FAMILY XXIII.

HYGROBATÆ, ILLIGER.

GENUS LVIII. — *RECURVIROSTRA*, LINNÆUS.

243. *RECURVIROSTRA AMERICANA*, LINNÆUS AND WILSON.

AMERICAN AVOSET.

WILSON, PLATE LXIII. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THIS species, from its perpetual clamour and flippancy of tongue, is called, by the inhabitants of Cape May, the lawyer; the comparison, however, reaches no farther; for our lawyer is simple, timid, and perfectly inoffensive.

In the description of the long legged avoSET, the similarity between that and the present is taken notice of. This resemblance extends to every thing but their colour. I found both these birds associated together on the salt marshes of New Jersey, on the 20th of May. They were then breeding. Individuals of the present species were few in respect to the other. They flew around the shallow pools exactly in the manner of the long legs, uttering the like sharp note of *chick, chick, chick*, alighting on the marsh or in the water indiscriminately, fluttering their loose wings, and shaking their half bent legs, as if ready to tumble over, keeping up a continual yelping note. They were, however, rather more shy, and kept at a greater distance. One which I wounded attempted repeatedly to dive; but the water was too shallow to permit them to do this with facility. The nest was built among the thick tufts of grass, at a small distance from one of these pools. It was composed of small twigs of a sea side shrub, dry grass, sea weed, &c. raised to the height of several inches. The eggs were four, of a dull olive colour, marked with large irregular blotches of black, and with others of a fainter tint.

This species arrives on the coast of Cape May late in April; rears its young, and departs again to the south early in October. While here, it almost constantly

frequents the shallow pools in the salt marshes; wading about, often to the belly, in search of food; viz. marine worms, snails, and various insects that abound among the soft muddy bottoms of the pools.

The male of this species is eighteen inches and a half long, and two feet and a half in extent; the bill is black, four inches in length, flat above, the general curvature upwards, except at the extremity, where it bends slightly down, ending in an extremely fine point; irides, reddish hazel; whole head, neck, and breast, a light sorrel colour; round the eye, and on the chin, nearly white; upper part of the back and wings, black; scapulars, and almost the whole back, white, though generally concealed by the black of the upper parts; belly, vent, and thighs, pure white; tail, equal at the end, white, very slightly tinged with cinereous; tertials, dusky brown; greater coverts, tipped with white; secondaries, white on their outer edges, and whole inner vanes; rest of the wing, deep black; naked part of the thighs, two and a half inches; legs, four inches, both of a very pale light blue, exactly formed, thinned, and netted, like those of the long legs; feet, half webbed; the outer membrane somewhat the broadest; there is a very slight hind toe, which, claw and all, does not exceed a quarter of an inch in length. In these two latter circumstances alone it differs from the long legs, but is in every other strikingly alike.

The female was two inches shorter, and three less in extent; the head and neck a much paler rufous, fading almost to white on the breast, and separated from the black of the back by a broader band of white; the bill was three inches and a half long; the leg half an inch shorter; in every other respect marked as the male. She contained a great number of eggs, some of them nearly ready for exclusion. The stomach was filled with small nails, periwinkle shell fish, some kind of mossy vegetable food, and a number of aquatic insects. The intestines were infested with tape worms, and a number of smaller bot-like worms, some of which wallowed in the cavity of the abdomen.

In Mr Peale's collection, there is one of this same species, said to have been brought from New Holland, differing little in the markings of its plumage from our own. The red brown on the neck does not descend so far, scarcely occupying any of the breast; it is also somewhat less.

In every stuffed and dried specimen of these birds which I have examined, the true form and flexure of the bill is altogether deranged, being naturally of a very tender and delicate substance.

GENUS LIX.—*PHENICOPTERUS*, LINNÆUS.

244. *PHENICOPTERUS RUBER*, LINNÆUS.—RED FLAMINGO.

WILSON, PLATE LXVI. FIG. IV.—EDINBURGH COLLEGE MUSEUM.

THIS very singular species being occasionally seen on the southern frontiers of the United States, and on the peninsula of East Florida, where it is more common, has a claim to a niche in our Ornithological Museum, although the author regrets, that, from personal observation, he can add nothing to the particulars of its history, already fully detailed in various European works. From the most respectable of these, the *Synopsis* of Dr Latham, he has collected such particulars as appear authentic and interesting.

"This remarkable bird has the neck and legs in a greater disproportion than any other bird; the length from the end of the bill to that of the tail, is four feet two or three inches; but to the end of the claws, measures sometimes more than six feet. The bill is four inches and a quarter long, and of a construction different from that of any other bird; the upper mandible very thin and flat, and somewhat movable; the under, thick; both of them bending downwards from the middle; the nostrils are linear, and placed in a blackish membrane; the end of the bill, as far as the bend, is black; from thence to the base, reddish yellow; round the base, quite to the eye, covered with a flesh coloured cere; the neck is slender, and of a great length; the

tongue, large, fleshy, filling the cavity of the bill, furnished with twelve or more hooked papillæ on each side, turning backwards; the tip, a sharp cartilaginous substance. The bird, when in full plumage, is wholly of a most deep scarlet, (those of Africa said to be the deepest,) except the quills, which are black; from the base of the thigh to the claws, measures thirty-two inches, of which the feathered part takes up no more than three inches; the bare part above the knee, thirteen inches; and from thence to the claws, sixteen; the colour of the bare parts is red, and the toes are furnished with a web, as in the duck genus, but is deeply indented. The legs are not straight, but slightly bent, the shin rather projecting.

“ These birds do not gain their full plumage till the third year. In the first, they are of a grayish white for the most part; the second, of a clearer white, tinged with red, or rather rose colour; but the wings and scapulars are red; in the third year, a general glowing scarlet manifests itself throughout; the bill and legs also keep pace with the gradation of colour in the plumage, these parts changing to their colours by degrees, as the bird approaches to an adult state.

“ Flamingoes prefer a warm climate; in the old continent not often met with beyond forty degrees north or south; every where seen on the African coast, and adjacent isles, quite to the Cape of Good Hope;* and now and then on the coasts of Spain,† Italy, and those of France lying in the Mediterranean Sea; being, at times, met with at Marseilles, and for some way up the Rhone; in some seasons frequents Aleppo,‡ and parts adjacent; seen also on the Persian side of the Caspian Sea; and from thence, along the western coast, as far as the Wolga; though this at uncertain times, and chiefly in considerable flocks, coming

* In Zee Coow river. — *Philosophical Transactions*. Once plenty in the Isle of France. — *Voyage to Mauritius*, p. 66.

† About Valencia, in the lake Albufera. — DILLON'S *Travels*, p. 374.

‡ RUSSEL'S *Aleppo*, p. 69.

from the north coast mostly in October and November; but so soon as the wind changes, they totally disappear.* They breed in the Cape Verd Isles, particularly in that of Sal.† The nest is of a singular construction, made of mud, in shape of a hillock, with a cavity at top; in this the female lays generally two white eggs,‡ of the size of those of a goose, but more elongated. The hillock is of such a height as to admit of the bird's sitting on it conveniently, or rather standing, as the legs are placed one on each side at full length.§ The young cannot fly till full grown, but run very fast.

“Flamingoes, for the most part, keep together in flocks, and now and then are seen in great numbers together, except in breeding time. Dampier mentions having, with two more in company, killed fourteen at once; but this was effected by secreting themselves, for they are very shy birds, and will, by no means, suffer any one to approach, openly, near enough to shoot them.|| Kolben observes, that they are very numerous at the Cape, keeping in the day on the borders of the lakes and rivers, and lodging themselves of nights in the long grass on the hills. They are also common to various places in the warmer parts of America, frequenting the same latitudes as in other quarters of the world; being met with in Peru, Chili, Cayenne,¶ and the coast of Brazil, as well as the various islands of the West Indies. Sloane found them in Jamaica; but particularly at the Bahama Islands, and that of Cuba, where they breed. When seen at a distance, they appear as a regiment of soldiers, being arranged alongside of one another, on the borders of the rivers, searching for food, which chiefly consists of

* *Decouv. Russ.* ii, p. 248. † DAMPIER'S *Voy.* i, p. 70.

‡ Never more than three, and seldom fewer. *Phil. Trans.*

§ Sometimes will lay the eggs on a projecting part of a low rock, if it be placed sufficiently convenient so as to admit of the legs being placed one on each side. — LINNÆUS.

¶ Davies talks of the gunner disguising himself in an ox hide, and, by this means, getting within gunshot. *Hist. of Barbadoes*, p. 87.

¶ Called there by the name of Tococo.

small fish,* or the eggs of them, and of water insects, which they search after, by plunging in the bill and part of the head; from time to time trampling with their feet to muddy the water, that their prey may be raised from the bottom. In feeding, they are said to twist the neck in such a manner, that the upper part of the bill is applied to the ground;† during this, one of them is said to stand sentinel, and the moment he sounds the alarm, the whole flock take wing. This bird, when at rest, stands on one leg, the other being drawn up close to the body, with the head placed under the wing on that side of the body it stands on.

“The flesh of these birds is esteemed pretty good meat, and the young thought, by some, equal to that of a partridge;‡ but the greatest dainty is the tongue, which was esteemed by the ancients an exquisite morsel.§ They are sometimes caught young, and brought up tame; but are ever impatient of cold, and in this state will seldom live a great while, gradually losing their colour, flesh, and appetite; and dying for want of that food, which, in a state of nature at large, they were abundantly supplied with.”

GENUS LX — PLATALEA

245. PLATALEA AJAJA. — LINNÆUS AND WILSON.

ROSEATE SPOONBILL.

WILSON, PLATE LXIII. FIG. I. — EDINBURGH COLLEGE MUSEUM.

THIS stately and elegant bird inhabits the sea shores of America, from Brazil to Georgia. It also appears to wander up the Mississippi sometimes in summer, the present specimen having been sent me from the neigh-

* Small shell fish. — GFSNER. † LINNÆUS, BRISSON.

‡ Commonly fat, and accounted delicate. — DAVIES'S *Hist. of Barbadoes*, p. 88. The inhabitants of Plovence always throw away the flesh, as it tastes fishy, and only make use of the feathers as ornaments to other birds at particular entertainments. — DILLON'S *Travels*, p. 374.

§ See Pliny, IX, cap. 48.

bourhood of Natchez, in excellent order; for which favour I am indebted to the family of my late benevolent and scientific friend, William Dunbar, Esq. of that territory. It is now deposited in Mr Peale's museum. This species, however, is rarely seen to the northward of the Alatomaha river; and even along the peninsula of Florida is a scarce bird. In Jamaica, several other of the West India islands, Mexico and Guiana, it is more common, but confines itself chiefly to the sea shore and the mouths of rivers. Captain Henderson says, it is frequently seen at Honduras. It wades about in quest of shell fish, marine insects, small crabs, and fish. In pursuit of these, it occasionally swims and dives.

There are few facts on record relative to this very singular bird. According to Latham, the young are of a blackish chestnut the first year; of the roseate colour of the present the second year; and of a deep scarlet the third. Having never been so fortunate as to meet with them in their native wilds, I regret my inability to throw any farther light on their history and manners. These, it is probable, may resemble, in many respects, those of the European species, the white spoonbill once so common in Holland.* To atone for this deficiency, I have endeavoured faithfully to describe this American species.

This bird measured two feet six inches in length, and near four feet in extent; the bill was six inches and a half long from the corner of the mouth, seven from its upper base, two inches over at its greatest width, and three quarters of an inch where narrowest; of a black colour for half its length, and covered with hard scaly protuberances, like the edges of oyster shells;

* The European species breeds on trees, by the sea side; lays three or four white eggs, powdered with a few pale red spots, and about the size of those of a hen; are very noisy during breeding time; feed on fish, mussels, &c. which, like the bald eagle, they frequently take from other birds, frightening them by clattering their bill they are also said to eat grass, weeds, and roots of reeds: they are migratory; their flesh reported to savour that of a goose; the young are reckoned good food.

these are of a whitish tint, stained with red; the nostrils are oblong, and placed in the centre of the upper mandible; from the lower end of each there runs a deep groove along each side of the mandible, and about a quarter of an inch from its edge; whole crown and chin, bare of plumage, and covered with a greenish skin; that below the under mandible, dilatable like those of the genus *pelicanus*; space round the eye, orange; irides, blood red; cheeks and hindhead, a bare black skin; neck, long, covered with short white feathers, some of which, on the upper part of the neck, are tipped with crimson; breast, white, the sides of which are tinged with a brown burnt colour; from the upper part of the breast proceeds a long tuft of fine hair-like plumage, of a pale rose colour; back, white, slightly tinged with brownish; wings, a pale wild rose colour, the shafts lake; the shoulders of the wings are covered with long hairy plumage, of a deep and splendid carmine; upper and lower tail-coverts, the same rich red; belly, rosy; rump, paler; tail, equal at the end, consisting of twelve feathers of a bright brownish orange, the shafts reddish; legs and naked part of the thighs, dark dirty red; feet, half webbed; toes, very long, particularly the hind one. The upper part of the neck had the plumage partly worn away, as if occasioned by resting it on the back, in the manner of the ibis. The skin on the crown is a little wrinkled; the inside of the wing a much richer red than the outer.

AMERICAN ORNITHOLOGY.

ORDER V.

ANSERES, LINNÆUS.

FAMILY XXIV.

LONGIPENNES, ILLIGER.

GENUS LXI.—*RHYNCHOPS*, LINNÆUS

246. *RHYNCHOPS NIGRA*, LINNÆUS AND WILSON.

BLACK SKIMMER, OR SHEERWATER.

WILSON, PLATE IX. FIG IV. — EDINBURGH COLLEGE MUSEUM.

THIS truly singular fowl is the only species of its tribe hitherto discovered. Like many others, it is a bird of passage in the United States, and makes its first appearance on the shores of New Jersey early in May. It resides there, as well as along the whole Atlantic coast, during the summer, and retires early in September. Its favourite haunts are low sand bars, raised above the reach of the summer tides; and also dry flat sands on the beach in front of the ocean. On such places it usually breeds along the shores of Cape May, in New Jersey. On account of the general coldness of the spring there, the sheerwater does not begin to lay until early in June, at which time these birds form themselves into small societies, fifteen or twenty pair frequently breeding within a few yards of each other. The nest is a mere hollow formed in the sand, without any other materials. The female lays three eggs, almost exactly oval, of a clear white, marked with large round spots of brownish black, and intermixed with others of pale Indian ink. These eggs measure one inch and three quarters, by one inch and a quarter. Half a bushel and more of eggs has sometimes been collected from one sand bar, within the compass of half an acre. These eggs have something of a fishy taste, but are eaten by many people on the coast. The female sits on them

only during the night, or in wet and stormy weather. The young remain for several weeks before they are able to fly; are fed with great assiduity by both parents; and seem to delight in lying with loosened wings, flat on the sand, enjoying its invigorating warmth. They breed but once in the season.

The singular conformation of the bill of this bird has excited much surprise; and some writers, measuring the divine proportions of nature by their own contracted standards of conception, in the plenitude of their vanity have pronounced it to be "a lame and defective weapon." Such ignorant presumption, or rather impiety, ought to hide its head in the dust on a calm display of the peculiar construction of this singular bird, and the wisdom by which it is so admirably adapted to the purposes or mode of existence for which it was intended. The sheerwater is formed for skimming, while on wing, the surface of the sea for its food, which consists of small fish, shrimps, young fry, &c. whose usual haunts are near the shore, and towards the surface. That the lower mandible, when dipt into and cleaving the water, might not retard the bird's way, it is thinned and sharpened like the blade of a knife; the upper mandible, being, at such times, elevated above water, is curtailed in its length, as being less necessary, but tapering gradually to a point, that, on shutting, it may offer less opposition. To prevent inconvenience from the rushing of the water, the mouth is confined to the mere opening of the gullet, which, indeed, prevents mastication taking place there; but the stomach, or gizzard, to which this business is solely allotted, is of uncommon hardness, strength, and muscularity, far surpassing, in these respects, any other water bird with which I am acquainted. To all these is added a vast expansion of wing, to enable the bird to sail with sufficient celerity while dipping in the water. The general proportion of the length of our swiftest hawks and swallows, to their breadth, is as one to two; but, in the present case, as there is not only the resistance of the air, but also that of the water, to overcome, a

still greater volume of wing is given, the sheerwater measuring nineteen inches in length, and upwards of forty-four in extent. In short, whoever has attentively examined this curious apparatus, and observed the possessor, with his ample wings, long bending neck, and lower mandible, occasionally dipt into and ploughing the surface, and the facility with which he procures his food, cannot but consider it a mere playful amusement, when compared with the dashing immersions of the tern, the gull, or the fish hawk, who, to the superficial observer, appear so superiorly accommodated.

The sheerwater is most frequently seen skimming close along shore about the first of the flood, at which time the young fry, shrimp, &c. are most abundant in such places. There are also numerous inlets among the low islands between the sea beach and main land of Cape May, where I have observed the sheerwaters, eight or ten in company, passing and repassing, at high-water, particular estuaries of those creeks that run up into the salt marshes, dipping, with extended neck, their open bills into the water, with as much apparent ease as swallows glean up flies from the surface. On examining the stomachs of several of these, shot at the time, they contained numbers of a small fish, usually called silver sides, from a broad line of a glossy silver colour that runs from the gills to the tail. The mouths of these inlets abound with this fry, or fish, probably feeding on the various matters washed down from the marshes.

The voice of the sheerwater is harsh and screaming, resembling that of the tern, but stronger. It flies with a slowly flapping flight, dipping occasionally, with steady expanded wings and bended neck, its lower mandible into the sea, and, with open mouth, receiving its food as it ploughs along the surface. It is rarely seen swimming on the water, but frequently rests in large parties on the sand bars at low water. One of these birds which I wounded in the wing, and kept in the room beside me for several days, soon became tame, and even familiar. It generally stood with its legs

erect, its body horizontal, and its neck rather extended. It frequently reposed on its belly, and, stretching its neck, rested its long bill on the floor. It spent most of its time in this way, or in dressing and arranging its plumage with its long scissors-like bill, which it seemed to perform with great ease and dexterity. It refused every kind of food offered it, and, I am persuaded, never feeds but when on the wing. As to the reports of its frequenting oyster beds, and feeding on these fish, they are contradicted by all those persons with whom I have conversed, whose long residence on the coast where these birds are common, has given them the best opportunities of knowing.

The sheerwater is nineteen inches in length, from the point of the bill to the extremity of the tail; the tips of the wings, when shut, extend full four inches farther; breadth, three feet eight inches; length of the lower mandible, four inches and a half; of the upper, three inches and a half; both of a scarlet red, tinged with orange, and ending in black; the lower extremely thin; the upper grooved, so as to receive the edge of the lower; the nostril is large and pervious, placed in a hollow near the base and edge of the upper mandible, where it projects greatly over the lower; upper part of the head, neck, back, and scapulars, deep black; wings, the same, except the secondaries, which are white on the inner vanes, and also tipped with white; tail, forked, consisting of twelve feathers, the two middle ones about an inch and a half shorter than the exterior ones, all black, broadly edged on both sides with white; tail-coverts, white on the outer sides, black in the middle; front, passing down the neck below the eye, throat, breast, and whole lower parts, pure white; legs and webbed feet, bright scarlet, formed almost exactly like those of the tern. Weight, twelve ounces avoirdupois. The female weighed nine ounces, and measured only sixteen inches in length, and three feet three inches in extent; the colours and markings were the same as those of the male, with the exception of

the tail, which was white, shafted, and broadly centred with black.

The birds from which these descriptions were taken, were shot on the 25th of May, before they had begun to breed. The female contained a great number of eggs, the largest of which were about the size of duck shot; the stomach, in both, was an oblong pouch, ending in a remarkably hard gizzard, curiously puckered or plaited, containing the half dissolved fragments of the small silver sides, pieces of shrimps, small crabs, and skippers, or sand fleas.

On some particular parts of the coast of Virginia these birds are seen, on low sand bars, in flocks of several hundreds together. There more than twenty nests have been found within the space of a square rod. The young are, at first, so exactly of a colour with the sand on which they sit, as to be with difficulty discovered, unless after a close search.

The sheerwater leaves our shores soon after his young are fit for the journey. He is found on various coasts of Asia, as well as America, residing principally near the tropics, and migrating into the temperate regions of the globe only for the purpose of rearing his young. He is rarely or never seen far out at sea, and must not be mistaken for another bird of the same name, a species of petrel,* which is met with on every part of the ocean, skimming, with bended wings, along the summits, declivities, and hollows of the waves.

GENUS LXII — STERNA, LINNÆUS

247. *STERNA ARANEA*, WILSON. — MARSH TERN.

WILSON, PLATE LXXII. FIG. VI.

THIS new species I first met with on the shores of Cape May, particularly over the salt marshes, and darting down after a kind of large black spider, plenty in such places. This spider can travel under water as

* *Procellaria Puffinus*, the Sheerwater Petrel

well as above, and, during summer at least, seems to constitute the principal food of the present tern. In several which I opened, the stomach was crammed with a mass of these spiders alone; these they frequently pick up from the pools as well as from the grass, dashing down on them in the manner of their tribe. Their voice is sharper and stronger than that of the common tern; the bill is differently formed, being shorter, more rounded above, and thicker; the tail is also much shorter, and less forked. They do not associate with the others, but keep in small parties by themselves.

The marsh tern is fourteen inches in length, and thirty-four in extent; bill, thick, much rounded above, and of a glossy blackness; whole upper part of the head and hind neck, black; whole upper part of the body, hoary white; shafts of the quill and tail-feathers, pure white; line from the nostril under the eye, and whole lower parts, pure white; tail, forked, the outer feathers about an inch and three quarters longer than the middle ones; the wings extend upwards of two inches beyond the tail; legs and feet, black; hind toe, small, straight, and pointed.

The female, as to plumage, differs in nothing from the male. The yearling birds, several of which I met with, have the plumage of the crown white at the surface, but dusky below; so that the boundaries of the black, as it will be in the perfect bird, are clearly defined; through the eye a line of black passes down the neck for about an inch, reaching about a quarter of an inch before it; the bill is not so black as in the others; the legs and feet dull orange, smutted with brown or dusky; tips and edges of the primaries, blackish; shafts, white.

This species breeds in the salt marshes; the female drops her eggs, generally three or four in number, on the dry drift grass, without the slightest appearance of a nest; they are of a greenish olive, spotted with brown.

A specimen of this tern has been deposited in the Museum of this city [Philadelphia.]

248. *STERNA HIRUNDO*, LINNÆUS. — GREAT TERN.

WILSON, PLATE LX. FIG. 1. — EDINBURGH COLLEGE MUSEUM.

THIS bird belongs to a tribe very generally dispersed over the shores of the ocean. Their generic characters are these:—Bill, straight, sharp pointed, a little compressed and strong; nostrils, linear; tongue, slender, pointed; legs, short; feet, webbed; hind toe and its nail, straight; wings, long; tail, generally forked. Turton enumerates twenty-five species of this genus, scattered over various quarters of the world; six of which, at least, are natives of the United States. From their long pointed wings, they are generally known to seafaring people and others residing near the sea-shore by the name of sea swallows; though some few, from their near resemblance, are confounded with the gulls.

The present species, or great tern, is common to the shores of Europe, Asia, and America. It arrives on the coast of New Jersey about the middle or 20th of April, led, no doubt, by the multitudes of fish which at that season visit our shallow bays and inlets. By many it is called the sheep's-head gull, from arriving about the same time with the fish of that name.

About the middle or 20th of May this bird commences laying. The preparation of a nest, which costs most other birds so much time and ingenuity, is here altogether dispensed with. The eggs, generally three in number, are placed on the surface of the dry drift grass, on the beach or salt marsh, and covered by the female only during the night, or in wet, raw, or stormy weather. At all other times the hatching of them is left to the heat of the sun. These eggs measure an inch and three-quarters in length, by about an inch and two-tenths in width, and are of a yellowish dun colour, sprinkled with dark brown and pale Indian ink. Notwithstanding they seem thus negligently abandoned during the day, it is very different in reality. One or both of the parents are generally fishing within view of

the place, and, on the near approach of any person, instantly make their appearance over head; uttering a hoarse jarring kind of cry, and flying about with evident symptoms of great anxiety and consternation. The young are generally produced at intervals of a day or so from each other, and are regularly and abundantly fed for several weeks, before their wings are sufficiently grown to enable them to fly. At first the parents alight with the fish which they have brought in their mouth or in their bill, and, tearing it in pieces, distribute it in such portions as their young are able to swallow. Afterwards they frequently feed them without alighting, as they skim over the spot; and, as the young become nearly ready to fly, they drop the fish among them where the strongest and most active has the best chance to gobble it up. In the mean time, the young themselves frequently search about the marshes, generally not far apart, for insects of various kinds; but so well acquainted are they with the peculiar language of their parents that warn them of the approach of an enemy, that, on hearing their cries, they instantly squat, and remain motionless until the danger be over.

The flight of the great tern, and, indeed, of the whole tribe, is not in the sweeping shooting manner of the land swallows, notwithstanding their name; the motions of their long wings are slower, and more in the manner of the gull. They have, however, great powers of wing and strength in the muscles of the neck, which enable them to make such sudden and violent plunges, and that from a considerable height too, headlong on their prey, which they never seize but with their bills. In the evening, I have remarked, as they retired from the upper parts of the bays, rivers, and inlets, to the beach for repose, about breeding time, that each generally carried a small fish in his bill.

As soon as the young are able to fly, they lead them to the sandy shoals and ripples where fish are abundant; and, while they occasionally feed them, teach them by their example to provide for themselves. They sometimes penetrate a great way inland, along the courses

of rivers, and are occasionally seen about all our numerous ponds, lakes, and rivers, most usually near the close of the summer.

This species inhabits Europe as high as Spitzbergen; is found on the arctic coasts of Siberia and Kamtschatka, and also on our own continent as far north as Hudson's Bay. In New England, it is called by some the mackerel gull. It retires from all these places, at the approach of winter, to more congenial seas and seasons.

The great tern is fifteen inches long, and thirty inches in extent; bill, reddish yellow, sometimes brilliant crimson, slightly angular on the lower mandible, and tipped with black; whole upper part of the head, black, extending to a point half way down the neck behind, and including the eyes; sides of the neck and whole lower parts, pure white; wing-quills, hoary, as if bleached by the weather, long and pointed; whole back, scapulars, and wing, bluish white, or very pale lead colour; rump and tail-coverts, white; tail, long, and greatly forked, the exterior feathers being three inches longer than the adjoining ones, the rest shortening gradually for an inch and a half to the middle ones, the whole of a pale lead colour; the outer edge of the exterior ones, black; legs and webbed feet, brilliant red lead; membranes of the feet, deeply scalloped; claws, large and black, middle one the largest. The primary quill-feathers are generally dark on their inner edges. The female differs in having the two exterior feathers of the tail considerably shorter. The voice of these birds is like the harsh jarring of an opening door, rusted on its hinges. The bone of the skull is remarkably thick and strong, as also the membrane that surrounds the brain; in this respect resembling the woodpecker's. In both, this provision is doubtless intended to enable the birds to support, without injury, the violent concussions caused by the plunging of the one, and the chiselling of the other.

249. *STERNA MINUTA*, LINNÆUS. — LESSER TERN.

WILSON, PLATE LX. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THIS beautiful little species looks like the preceding in miniature, but surpasses it far in the rich glossy satin-like white plumage with which its throat, breast, and whole lower parts, are covered. Like the former, it is also a bird of passage, but is said not to extend its migrations to so high a northern latitude, being more delicate and susceptible of cold. It arrives on the coast somewhat later than the other, but in equal and perhaps greater numbers; coasts along the shores, and also over the pools in the salt marshes, in search of prawns, of which it is particularly fond; hovers, suspended in the air, for a few moments above its prey, exactly in the manner of some of our small hawks, and dashes head-long down into the water after it, generally seizing it with its bill; mounts instantly again to the same height, and moves slowly along as before, eagerly examining the surface below. About the 25th of May, or beginning of June, the female begins to lay. The eggs are dropt on the dry and warm sand, the heat of which, during the day, is fully sufficient for the purpose of incubation. This heat is sometimes so great, that one can scarcely bear the hand in it for a few moments without inconvenience. The wonder would therefore be the greater, should the bird sit on her eggs during the day, when her warmth is altogether unnecessary and perhaps injurious, than that she should cover them only during the damps of night, and in wet and stormy weather; and furnishes another proof that the actions of birds are not the effect of mere blind impulse, but of volition, regulated by reason, depending on various incidental circumstances to which their parental cares are ever awake. I lately visited those parts of the beach on Cape May where this little bird breeds. The eggs, generally four in number, were placed on the flat sands, safe beyond the reach of the highest summer

tide. They were of a yellowish brown colour, blotched with rufous, and measured nearly an inch and three quarters in length. During my whole stay, these birds flew in crowds around me, and often within a few yards of my head, squeaking like so many young pigs, which their voice strikingly resembles. A humming bird, that had accidentally strayed to the place, appeared suddenly among this outrageous group, several of whom darted angrily at him; but he shot like an arrow from them, directing his flight straight towards the ocean. I have no doubt but the distressing cries of the terns had drawn this little creature to the scene, having frequently witnessed his anxious curiosity on similar occasions in the woods.

The lesser tern feeds on beetles, crickets, spiders, and other insects, which it picks up from the marshes, as well as on small fish, on which it plunges at sea. Like the former, it also makes extensive incursions inland along the river courses, and has frequently been shot several hundred miles from the sea. It sometimes sits for hours together on the sands, as if resting after the fatigues of flight to which it is exposed.

The lesser tern is extremely tame and unsuspicious, often passing you on its flight, and within a few yards, as it traces the windings and indentations of the shore in search of its favourite prawns and skippers. Indeed, at such times it appears either altogether heedless of man, or its eagerness for food overcomes its apprehensions for its own safety. We read in ancient authors, that the fishermen used to float a cross of wood, in the middle of which was fastened a small fish for a bait, with limed twigs stuck to the four corners, on which the bird darting was entangled by the wings. But this must have been for mere sport, or for its feathers, the value of the bird being scarcely worth the trouble, as they are generally lean, and the flesh savouring strongly of fish.

The lesser tern is met with in the south of Russia, and about the Black and Caspian Sea; also in Siberia

about the Irish.* With the former, it inhabits the shores of England during the summer, where it breeds and migrates, as it does here, to the south, as the cold of autumn approaches.

This species is nine and a half inches long, and twenty inches in extent; bill, bright reddish yellow; nostril, pervious; lower mandible, angular; front, white, reaching in two narrow points over the eye; crown, band through the eye and hindhead, black, tapering to a point as it descends; cheeks, sides of the neck and whole lower parts, of the most rich and glossy white, like the brightest satin; upper parts of the back and wings, a pale glossy ash or light lead colour; the outer edges of the three exterior primaries, black, their inner edges, white; tail, pale ash, but darker than the back, and forked, the two outer feathers an inch longer, tapering to a point; legs and feet, reddish yellow; webbed feet, claws, and hind toe, exactly formed like those of the preceding. The female nearly resembles the male, with the exception of having the two exterior tail-feathers shorter.

250. *STERNA NIGRA*, LINNÆUS. — *STERNA PLUMBEA*, WILSON.

SHORT-TAILED TERN.

WILSON, PLATE LX. FIG. III.

A specimen of this bird was first sent me by Mr Beasley of Cape May; but being in an imperfect state, I could form no correct notion of the species, sometimes supposing it might be a young bird of the preceding tern. Since that time, however, I have had an opportunity of procuring a considerable number of this same kind, corresponding almost exactly with each other.

On the 6th of September, 1812, after a violent north-east storm, which inundated the meadows of Schuylkill in many places, numerous flocks of this tern all at

* PENNANT.

once made their appearance, flying over those watery spaces, picking up grasshoppers, beetles, spiders, and other insects, that were floating on the surface. Some hundreds of them might be seen at the same time, and all seemingly of one sort. They were busy, silent, and unsuspicious, darting down after their prey without hesitation, though perpetually harassed by gunners whom the novelty of their appearance had drawn to the place. Several flocks of the yellow shanks snipe, and a few purres, appeared also in the meadows at the same time, driven thither doubtless by the violence of the storm.

I examined upwards of thirty individuals of this species by dissection, and found both sexes alike in colour. Their stomachs contained grasshoppers, crickets, spiders, &c. but no fish. The people on the sea coast have since informed me that this bird comes to them only in the fall, or towards the end of summer, and is more frequently seen about the mill-ponds and fresh water marshes than in the bays; and add, that it feeds on grasshoppers and other insects which it finds on the meadows and marshes, picking them from the grass, as well as from the surface of the water. They have never known it to associate with the lesser tern, and consider it altogether a different bird. This opinion seems confirmed by the above circumstances, and by the fact of its greater extent of wing, being full three inches wider than the lesser tern, and also making its appearance after the others have gone off.

The short-tailed tern measures eight inches and a half from the point of the bill to the tip of the tail, and twenty-three inches in extent; the bill is an inch and a quarter in length, sharp pointed, and of a deep black colour; a patch of black covers the crown, auriculars, spot before the eye, and hindhead; the forehead, eyelids, sides of the neck, passing quite round below the hindhead, and whole lower parts, are pure white; the back is dark ash, each feather broadly tipped with brown; the wings, a dark lead colour, extending an inch and a half beyond the tail, which is also of the same tint, and

slightly forked; shoulders of the wing, brownish ash; legs and webbed feet, tawny. It had a sharp shrill cry when wounded and taken.

This is probably the brown tern mentioned by Willoughby, of which so many imperfect accounts have already been given.

251. *STERNA FULIGINOSA*.—GMELIN AND WILSON.

SOOTY TERN.

WILSON, PLATE LXXII. FIG. VII.—EDINBURGH COLLEGE MUSEUM.

THIS bird has been long known to navigators, as its appearance at sea usually indicates the vicinity of land; instances, however, have occurred, in which they have been met with one hundred leagues from shore.* The species is widely dispersed over the various shores of the ocean. They were seen by Dampier in New Holland, are in prodigious numbers in the island of Ascension, and in Christmas Island are said to lay, in December, one egg on the ground; the egg is yellowish, with brown and violet spots.† In passing along the northern shores of Cuba and the coast of Florida and Georgia, in the month of July, I observed this species very numerous and noisy, dashing down headlong after small fish. I shot and dissected several, and found their stomachs uniformly filled with fish. I could perceive little or no difference between the colours of the male and female.

Length of the sooty tern, seventeen inches, extent, three feet six inches; bill, an inch and a half long, sharp pointed and rounded above, the upper mandible serrated slightly near the point; nostril, an oblong slit, colour of the bill, glossy black; irides, dusky; forehead, as far as the eyes, white; whole lower parts and sides of the neck, pure white; rest of the plumage, black; wings, very long and pointed, extending, when shut, nearly to the extremity of the tail, which is greatly

* Cook, *Voyage*, i. p. 275.

† TURTON.

forked, and consists of twelve feathers, the two exterior ones four inches longer than those of the middle, the whole of a deep black, except the two outer feathers, which are white, but towards the extremities a little blackish on the inner vanes; legs and webbed feet, black; hind toe, short.

The secondary wing feathers are eight inches shorter than the longest primary.

This bird frequently settles on the rigging of ships at sea, and, in common with another species, *S. stolida*, is called by sailors the noddy.

GENUS LXIII — *LARUS*, LINNÆUS.

252. *LARUS ATRICILIA*, LINNÆUS. — *LARUS RIDIBUNDUS*, WILSON.

LAUGHING GULL. *

WILSON, PLATE LXXIV. FIG. IV. — EDINBURGH COLLEGE MUSEUM.

LENGTH, seventeen inches; extent, three feet six inches; bill, thighs, legs, feet, sides of the mouth, and eyelids, dark blood red; inside of the mouth, vermilion; bill, nearly two inches and a half long; the nostril is placed rather low; the eyes are black; above and below each eye there is a spot of white; the head and part of the neck are black, remainder of the neck, breast, whole lower parts, tail-coverts and tail, pure white; the scapulars, wing-coverts, and whole upper parts, are of a fine blue ash colour; the first five primaries are black towards their extremities; the secondaries are tipped largely with white, and almost all the primaries slightly; the bend of the wing is white, and nearly three inches long; the tail is almost even, it consists of twelve feathers, and its coverts reach within an inch and a half of its tip; the wings extend two inches beyond the tail; a delicate blush is perceivable on the breast and belly; length of tarsus, two inches.

The head of the female is of a dark dusky slate colour; in other respects, she resembles the male.

* Named in the plate, Black-headed Gull.

In some individuals, the crown is of a dusky gray; the upper part and sides of the neck, of a lead colour; the bill and legs, of a dirty, dark, purplish brown. Others have not the white spots above and below the eyes; these are young birds.

The changes of plumage, to which birds of this genus are subject, have tended not a little to confound the naturalist; and a considerable collision of opinion, arising from an imperfect acquaintance with the living subjects, has been the result. To investigate thoroughly their history, it is obviously necessary that the ornithologist should frequently explore their native haunts; and, to determine the species of periodical or occasional visitors, an accurate comparative examination of many specimens, either alive or recently killed, is indispensable. Less confusion would arise among authors, if they would occasionally abandon their accustomed walks—their studies and their museums, and seek correct knowledge in the only place where it is to be obtained—in the grand temple of nature. As it respects, in particular, the tribe under review, the zealous inquirer would find himself amply compensated for all his toil, by observing these neat and clean birds coursing along the rivers and coast, enlivening the prospect by their airy movements, now skimming closely over the watery element, watching the motions of the surges, and now rising into the higher regions sporting with the winds,—while he inhaled the invigorating breezes of the ocean, and listened to the soothing murmurs of its billows.

The laughing gull, known in America by the name of the black-headed gull, is one of the most beautiful and most sociable of its genus. They make their appearance on the coast of New Jersey in the latter part of April; and do not fail to give notice of their arrival by their familiarity and loquacity. The inhabitants treat them with the same indifference that they manifest towards all those harmless birds which do not minister either to their appetite or their avarice; and hence the black-heads may be seen in companies around

the farm house, coursing along the river shores, gleaning up the refuse of the fishermen, and the animal substances left by the tide; or scattered over the marshes and newly ploughed fields, regaling on the worms, insects and their larvæ, which, in the vernal season, the bounty of Nature provides for the sustenance of myriads of the feathered race.

On the Jersey side of the Delaware Bay, in the neighbourhood of Fishing Creek, about the middle of May, the black-headed gulls assemble in great multitudes, to feed upon the remains of the king crabs which the hogs have left, or upon the spawn which those curious animals deposit in the sand, and which is scattered along the shore by the waves. At such times, if any one approach to disturb them, the gulls will rise up in clouds, every individual squalling so loud, that the roar may be heard at the distance of two or three miles.

It is an interesting spectacle to behold this species when about recommencing their migrations. If the weather be calm, they will rise up in the air, spirally, chattering all the while to each other in the most sprightly manner, their notes at such times resembling the singing of a hen, but far louder, changing often into a *haw, ha ha ha haw!* the last syllable lengthened out like the excessive laugh of a negro. When mounting and mingling together, like motes in the sunbeams, their black heads and wing-tips, and snow white plumage, give them a very beautiful appearance. After gaining an immense height, they all move off, with one consent, in a direct line towards the point of their destination.

This bird breeds in the marshes. The eggs are three in number, of a dun clay colour, thinly marked with small irregular touches of a pale purple, and pale brown; some are of a deeper dun, with larger marks, and less tapering than others; the egg measures two inches and a quarter by one inch and a half.

The black-heads frequently penetrate into the interior, especially as far as Philadelphia; but they seem to

prefer the neighbourhood of the coast for the purpose of breeding. They retire southward early in autumn.

GENUS LXIV — *PROCELLARIA*, LINNÆUS

253. *PROCELLARIA PELAGICA*, LINNÆUS.

STORMY PETREL.

WILSON, PLATE LX. FIG. VI. — EDINBURGH COLLEGE MUSEUM.

THERE are few persons who have crossed the Atlantic, or traversed much of the ocean, who have not observed these solitary wanderers of the deep, skimming along the surface of the wild and wasteful ocean, flitting past the vessel like swallows, or following in her wake, gleaning their scanty pittance of food from the rough and whirling surges. Habited in mourning, and making their appearance generally in greater numbers previous to or during a storm, they have long been fearfully regarded by the ignorant and superstitious, not only as the foreboding messengers of tempests and dangers to the hapless mariner, but as wicked agents, connected, somehow or other, in creating them. "Nobody," say they, "can tell any thing of where they come from, or how they breed, though, as sailors sometimes say, it is supposed that they hatch their eggs under their wings as they sit on the water." This mysterious uncertainty of their origin, and the circumstances above recited, have doubtless given rise to the opinion so prevalent among this class of men, that they are in some way or other connected with that personage who has been styled the Prince of the Power of the Air. In every country where they are known, their names have borne some affinity to this belief. They have been called witches,* stormy petrels, the devil's birds, Mother Carey's chickens,† probably from some celebrated ideal hag of that name; and their unexpected

* *Arctic Zoology*, p. 464.

† This name seems to have been originally given them by Captain Carteret's sailors, who met with these birds on the coast of Chili. See HAWKESWORTH'S *Voyages*, vol. 1, p. 203.

and numerous appearance has frequently thrown a momentary damp over the mind of the hardiest seaman.

It is the business of the naturalist, and the glory of philosophy, to examine into the reality of these things, to dissipate the clouds of error and superstition wherever they begin to darken and bewilder the human understanding, and to illustrate nature with the radiance of truth. With these objects in view, we shall now proceed, as far as the few facts we possess will permit, in our examination into the history of this celebrated species.

The stormy petrel, the least of the whole twenty-four species of its tribe enumerated by ornithologists, and the smallest of all palmated fowls, is found over the whole Atlantic Ocean, from Europe to North America, at all distances from land, and in all weathers; but is particularly numerous near vessels immediately preceding and during a gale, when flocks of them crowd in her wake, seeming then more than usually active in picking up various matters from the surface of the water. This presentiment of a change of weather is not peculiar to the petrel alone, but is noted in many others, and common to all, even to those long domesticated. The woodpeckers, the snow-birds, the swallows, are all observed to be uncommonly busy before a storm, searching for food with great eagerness, as if anxious to provide for the privations of the coming tempest. The common ducks and the geese are infallibly noisy and tumultuous before falling weather; and though, with these, the attention of man renders any extra exertions for food at such times unnecessary, yet they wash, oil, dress, and arrange their plumage, with uncommon diligence and activity. The intelligent and observing farmer remarks this bustle, and wisely prepares for the issue; but he is not so ridiculously absurd as to suppose, that the storm which follows is produced by the agency of these feeble creatures, who are themselves equal sufferers by its effects with man. He looks on them rather as useful monitors, who, from the delicacy of their organs, and a perception superior to his

own, point out the change in the atmosphere before it has become sensible to his grosser feelings; and thus, in a certain degree, contribute to his security. And why should not those who navigate the ocean contemplate the appearance of this unoffending little bird in like manner, instead of eyeing it with hatred and execration? As well might they curse the midnight lighthouse, that, star-like, guides them on their watery way, or the buoy, that warns them of the sunken rocks below, as this harmless wanderer, whose manner informs them of the approach of the storm, and thereby enables them to prepare for it.

The stormy petrels, or Mother Carey's chickens, breed in great numbers on the rocky shores of the Bahama and the Bermuda Islands, and in some places on the coast of East Florida and Cuba. They breed in communities, like the bank swallows, making their nests in the holes and cavities of the rocks above the sea, returning to feed their young only during the night, with the superabundant oily food from their stomachs. At these times they may be heard making a continued clattering sound like frogs during the whole night. In the day they are silent, and wander widely over the ocean. This easily accounts for the vast distance they are sometimes seen from land, even in the breeding season. The rapidity of their flight is at least equal to the fleetness of our swallows. Calculating this at the rate of one mile per minute, twelve hours would be sufficient to waft them a distance of seven hundred and twenty miles; but it is probable that the far greater part confine themselves much nearer land during that interesting period.

In the month of July, while on a voyage from New Orleans to New York, I saw few or none of these birds in the Gulf of Mexico, although our ship was detained there by calms for twenty days, and carried by currents as far south as Cape Antonio, the westernmost extremity of Cuba. On entering the Gulf stream, and passing along the coasts of Florida and the Carolinas, these birds made their appearance in great

numbers, and in all weathers, contributing much, by their sprightly evolutions of wing, to enliven the scene, and affording me every day several hours of amusement. It is indeed an interesting sight to observe these little birds in a gale, coursing over the waves, down the declivities, up the ascents of the foaming surf that threatens to burst over their heads, sweeping along the hollow troughs of the sea, as in a sheltered valley, and again mounting with the rising billow, and just above its surface, occasionally dropping its feet, which, striking the water, throws it up again with additional force, sometimes leaping, with both legs parallel, on the surface of the roughest waves for several yards at a time. Meanwhile it continues coursing from side to side of the ship's wake, making excursions far and wide, to the right and to the left, now a great way ahead, and now shooting astern for several hundred yards, returning again to the ship as if she were all the while stationary, though perhaps running at the rate of ten knots an hour. But the most singular peculiarity of this bird is its faculty of standing, and even running, on the surface of the water, which it performs with apparent facility. When any greasy matter is thrown overboard, these birds instantly collect around it, and, facing to windward, with their long wings expanded, and their webbed feet patting the water, the lightness of their bodies, and the action of the wind on their wings, enable them to do this with ease. In calm weather they perform the same manœuvre, by keeping their wings just so much in action as to prevent their feet from sinking below the surface. According to Buffon,* it is from this singular habit that the whole genus have obtained the name Petrel, from the apostle Peter, who, as Scripture informs us, also walked on the water.

As these birds often come up immediately under the stern, one can examine their form and plumage with nearly as much accuracy as if they were in the hand.

* BUFFON, tome xxiii, p. 299.

They fly with the wings forming an almost straight horizontal line with the body, the legs extended behind, and the feet partly seen stretching beyond the tail. Their common note of *weet, weet*, is scarcely louder than that of a young duck of a week old, and much resembling it. During the whole of a dark, wet, and boisterous night, which I spent on deck, they flew about the after-rigging, making a singular hoarse chattering, which in sound resembled the syllables *patrít tu cuk cuk tu tu*, laying the accent strongly on the second syllable *tret*. Now and then I conjectured that they alighted on the rigging, making then a lower curring noise.

Notwithstanding the superstitious fears of the seamen, who dreaded the vengeance of the survivors, I shot fourteen of these birds one calm day in lat. 33°, eighty or ninety miles off the coast of Carolina, and had the boat lowered to pick them up. These I examined with considerable attention, and found the most perfect specimens as follow :—

Length, six inches and three quarters, extent, thirteen inches and a half; bill, black; nostrils, united in a tubular projection, the upper mandible grooved from thence, and overhanging the lower like that of a bird of prey; head, back, and lower parts, brown sooty black; greater wing-coverts, pale brown, minutely tipped with white; sides of the vent and whole tail-coverts, pure white; wings and tail, deep black, the latter nearly even at the tip, or very slightly forked; in some specimens two or three of the exterior tail-feathers were white for an inch or so at the root; legs and naked part of the thighs, black; feet, webbed, with the slight rudiments of a hind toe; the membrane of the foot is marked with a spot of straw yellow, and finely serrated along the edges; eyes, black. Male and female differing nothing in colour.

On opening these, I found the first stomach large, containing numerous round semitransparent substances of an amber colour, which I at first suspected to be the spawn of some fish; but on a more close and careful

inspection, they proved to be a vegetable substance, evidently the seeds of some marine plant, and about as large as mustard seed. The stomach of one contained a fish, half digested, so large that I should have supposed it too bulky for the bird to swallow; another was filled with the tallow which I had thrown overboard, and all had quantities of the seeds already mentioned both in their stomachs and gizzards; in the latter were also numerous minute pieces of barnacle shells. On a comparison of the seeds above mentioned with those of the *gulf-weed*, so common and abundant in this part of the ocean, they were found to be the same. Thus it appears, that these seeds, floating perhaps a little below the surface, and the barnacles with which ships' bottoms usually abound, being both occasionally thrown up to the surface by the action of the vessel through the water in blowing weather, entice these birds to follow in the ship's wake at such times, and not, as some have imagined, merely to seek shelter from the storm, the greatest violence of which they seem to disregard. There is also the greasy dish washings, and other oily substances thrown over by the cook, on which they feed with avidity, but with great good nature, their manners being so gentle, that I never observed the slightest appearance of quarrelling or dispute among them.

One circumstance is worthy of being noticed, and shews the vast range they take over the ocean: In firing at these birds a quill-feather was broken in each wing of an individual, and hung fluttering in the wind, which rendered it so conspicuous among the rest as to be known to all on board. This bird, notwithstanding its inconvenience, continued with us for nearly a week, during which we sailed a distance of more than four hundred miles to the north. Flocks continued to follow us until near Sandy Hook.

The length of time these birds remain on wing is no less surprising. As soon as it was light enough in the morning to perceive them, they were found roaming about as usual; and I have often sat in the evening, in

the boat which was suspended by the ship's stern, watching their movements, until it was so dark that the eye could no longer follow them, though I could still hear their low note of *weet weet*, as they approached near to the vessel below me.

These birds are sometimes driven by violent storms to a considerable distance inland. One was shot some years ago on the river Schuylkill near Philadelphia; and Bewick mentions their being found in various quarters of the interior of England. From the nature of their food, their flesh is rank and disagreeable; though they sometimes become so fat, that, as Mr Pennant, on the authority of Brunnich, asserts, "the inhabitants of the Feroe Isles make them serve the purposes of a candle, by drawing a wick through the mouth and rump, which being lighted, the flame is fed by the fat and oil of the body."*

* *British Zoology*, vol. ii, p. 434.

FAMILY XXV.

LAMELLOSODENTATI, ILLIGER.

GENUS LXV — *ANAS*, LINNÆUS.

SUBGENUS I. — *ANSER*, BRISSON.

254. *ANAS HYPERBORÆA*, GMELIN AND WILSON.

SNOW GOOSE.

WILSON, PLATE LXVIII. FIG. V. — MALE.

EDINBURGH COLLEGE MUSEUM.

THIS bird is particularly deserving of the farther investigation of naturalists; for, if I do not greatly mistake, English writers have, from the various appearances which this species assumes in its progress to perfect plumage, formed no less than four different kinds, which they describe as so many distinct species, viz. the snow goose, the white fronted or laughing goose, the bean goose, the blue-winged goose, all of which, I have little doubt, will hereafter be found to be nothing more than perfect and imperfect individuals, male and female, of the snow goose, now before us.

This species, called on the sea coast the red goose, arrives in the river Delaware from the north, early in November, sometimes in considerable flocks, and is extremely noisy, their notes being shriller and more squeaking than those of the Canada, or common wild goose. On their first arrival, they make but a short stay, proceeding, as the depth of winter approaches, farther to the south; but from the middle of February until the breaking up of the ice in March, they are frequently numerous along both shores of the Delaware, about and below Reedy Island, particularly near Old Duck Creek, in the State of Delaware. They feed on the roots of the reeds there, tearing them up from the marshes like hogs. Their flesh, like most

others of their tribe that feed on vegetables, is excellent.

The snow goose is two feet eight inches in length, and five feet in extent; the bill is three inches in length, remarkably thick at the base, and rising high in the forehead, but becomes small and compressed at the extremity, where each mandible is furnished with a whitish rounding nail; the colour of the bill is a purplish carmine; the edges of the two mandibles separate from each other in a singular manner for their whole length, and this gibbosity is occupied by dentated rows resembling teeth, these and the parts adjoining being of a blackish colour; the whole plumage is of a snowy whiteness, with the exception, first, of the fore part of the head all round as far as the eyes, which is of a yellowish rust colour intermixed with white; and, second, the nine exterior quill-feathers, which are black, shafted with white, and white at the root; the coverts of these last, and also the bastard wing, are sometimes of a pale ash colour; the legs and feet of the same purplish carmine as the bill; iris, dark hazel; the tail is rounded, and consists of sixteen feathers; that and the wings, when shut, nearly of a length.

The bill of this bird is singularly curious; the edges of the upper and lower gibbosities have each twenty-three indentations, or strong teeth, on each side; the inside or concavity of the upper mandible has also seven lateral rows of strong projecting teeth; and the tongue, which is horny at the extremity, is armed on each side with thirteen long and sharp bony teeth, placed like those of a saw, with their points directed backwards; the tongue, turned up and viewed on its lower side, looks very much like a human finger with its nail. This conformation of the mandibles, exposing two rows of strong teeth, has probably given rise to the epithet laughing, bestowed on one of its varieties, though it might with as much propriety have been named the grinning goose.

The specimen from which the above description

was taken, was shot on the Delaware, below Philadelphia, on the 15th of February, and on dissection proved to be a male; the windpipe had no labyrinth, but, for an inch or two before its divarication into the lungs, was inflexible, not extensile like the rest, and rather wider in diameter. The gullet had an expansion before entering the stomach, which last was remarkably strong, the two great grinding muscles being nearly five inches in diameter. The stomach was filled with fragments of the roots of reeds and fine sand. The intestines measured eight feet in length, and were not remarkably thick. The liver was small. For the young and female of this species, see next article.

Latham observes that this species is very numerous at Hudson's Bay, that they visit Severn River in May, and stay a fortnight, but go farther north to breed; they return to Severn Fort the beginning of September, and stay till the middle of October, when they depart for the south, and are observed to be attended by their young in flocks innumerable. They seem to occupy also the western side of America, as they were seen at Aoonalashka* as well as at Kamtschatka.† White brant, with black tips to their wings, were also shot by Captains Lewis and Clark's exploring party, near the mouth of the Columbia River, which were probably the same as the present species.‡ Mr Pennant says, "they are taken by the Siberians in nets, under which they are decoyed by a person covered with a white skin, and crawling on all-fours; when others driving them, these stupid birds mistaking him for their leader, follow him, when they are entangled in the nets, or led into a kind of pond made for the purpose!" We might here with propriety add— *This wants confirmation.*

* ELLIS's *Narrative*.

† *History of Kamtschatka*.

‡ GASS's *Journal*, p. 161.

255. *ANAS HYPERBOREA*. — YOUNG OF THE SNOW GOOSE.

WILSON, PLATE LXIX. FIG. V.

THE full plumaged perfect male bird of this species has already been described in the preceding article, and I now hazard a conjecture, founded on the best examination I could make of the young bird, comparing it with the descriptions of the different accounts, that the whole of them have been taken from the various individuals of the present, in a greater or lesser degree of approach to its true and perfect colours, &c.

These birds pass along our coasts, and settle in our rivers, every autumn; among thirty or forty, there are seldom more than six or eight pure white, or old birds. The rest vary so much, that no two are exactly alike; yet all bear the most evident marks, in the particular structure of their bills, &c. of being the same identical species. A gradual change so great, as from a bird of this colour to one of pure white, must necessarily produce a number of varieties, or differences in the appearance of the plumage, but the form of the bill and legs remains the same, and any peculiarity in either is the surest mean we have to detect a species under all its various appearances. It is therefore to be regretted, that authors have paid so little attention to the singular conformation of the bill; for neither that nor the internal peculiarities are at all mentioned.

The length of the bird was twenty-eight inches; extent, four feet eight inches; bill, gibbous at the sides both above and below, exposing the teeth of the upper and lower mandibles, and furnished with a nail at the tip on both; the whole being of a light reddish purple, or pale lake, except the gibbosity, which is black, and the two nails, which are of a pale light blue; nostril, pervious, an oblong slit, placed nearly in the middle of the upper mandible; irides, dark brown; whole head, and half of the neck, white; rest of the neck

and breast, as well as upper part of the back, of a purplish brown, darkest where it joins the white; all the feathers being finely tipped with pale brown; whole wing-coverts, very pale ash, or light lead colour, primaries and secondaries, black; tertials, long, tapering, centred with black, edged with light blue, and usually fall over the wing; scapulars, cinereous brown; lower parts of the back and rump, of the same light ash as the wing-coverts; tail, rounded, blackish, consisting of sixteen feathers, edged and tipped broadly with white; tail-coverts, white; belly and vent, whitish, intermixed with cinereous; feet and legs, of the same lake colour as the bill.

This specimen was a female; the tongue was thick and fleshy, armed on each side with thirteen strong bony teeth, exactly similar in appearance, as well as in number, to those on the tongue of the snow goose; the inner concavity of the upper mandible was also studded with rows of teeth. The stomach was extremely muscular, filled with some vegetable matter, and clear gravel.

With this, another was shot, differing considerably in its markings, having little or no white on the head, and being smaller; its general colour, dark brown, intermixed with pale ash, and darker below, but evidently of the same species with the other.

256. *ANAS CANADENSIS*, LINNÆUS AND WILSON.

CANADA GOOSE.

WILSON, PLATE LXVII. FIG. IV. — EDINBURGH COLLEGE MUSEUM.

THIS is the common wild goose of the United States, universally known over the whole country; whose regular periodical migrations are the sure signals of returning spring, or approaching winter. The tracts of their vast migratory journeys are not confined to the sea coast, or its vicinity. In their aerial voyages to and from the north, these winged pilgrims pass over the

interior on both sides of the mountains, as far west, at least, as the Osage river, and I have never yet visited any quarter of the country where the inhabitants are not familiarly acquainted with the regular passing and repassing of the wild geese. The general opinion here is, that they are on their way to the lakes to breed; but the inhabitants on the confines of the great lakes that separate us from Canada, are equally ignorant with ourselves of the particular breeding places of those birds. There, their journey north is but commencing; and how far it extends it is impossible for us at present to ascertain, from our little acquaintance with these frozen regions. They were seen by Hearne in large flocks within the Arctic circle, and were then pursuing their way still farther north. Captain Phipps speaks of seeing wild geese feeding at the water's edge, on the dreary coast of Spitzbergen, in lat. $80^{\circ} 27'$. It is highly probable that they extend their migrations under the very pole itself, amid the silent desolation of unknown countries, shut out since creation from the prying eye of man by everlasting and insuperable barriers of ice. That such places abound with their suitable food, we cannot for a moment doubt; while the absence of their great destroyer, man, and the splendours of a perpetual day, may render such regions the most suitable for their purpose.

Having fulfilled the great law of nature, the approaching rigours of that dreary climate oblige these vast congregated flocks to steer for the more genial regions of the south. And no sooner do they arrive at those countries of the earth inhabited by man, than carnage and slaughter is commenced on their ranks. The English at Hudson's Bay, says Pennant, depend greatly on geese, and in favourable years kill three or four thousand, and barrel them up for use. They send out their servants as well as Indians, to shoot these birds on their passage. It is in vain to pursue them; they therefore form a row of huts, made of boughs, at musket-shot distance from each other, and place them in a line across the vast marshes of the country. Each

stand, or hovel, as they are called, is occupied by only a single person. These attend the flight of the birds, and, on their approach, mimic their cackle so well, that the geese will answer, and wheel, and come nearer the stand. The sportsman keeps motionless, and on his knees, with his gun cocked the whole time, and never fires till he has seen the eyes of the geese. He fires as they are going from him, then picks up another gun that lies by him and discharges that. The geese which he has killed he sets upon sticks, as if alive, to decoy others; he also makes artificial birds for the same purpose. In a good day, for they fly in very uncertain and unequal numbers, a single Indian will kill two hundred. Notwithstanding every species of goose has a different call, yet the Indians are admirable in their imitations of every one. The autumnal flight lasts from the middle of August to the middle of October; those which are taken in this season, when the frosts begin, are preserved in their feathers, and left to be frozen for the fresh provisions of the winter stock. The feathers constitute an article of commerce, and are sent to England.

The vernal flight of the geese lasts from the middle of April until the middle of May. Their first appearance coincides with the thawing of the swamps, when they are very lean. Their arrival from the south is impatiently attended; it is the harbinger of the spring, and the month named by the Indians the goose moon. They appear usually at their settlements about St George's day, O. S. and fly northward, to nestle in security. They prefer islands to the continent, as farther from the haunts of man.*

After such prodigious havoc as thus appears to be made among these birds, and their running the gauntlet, if I may so speak, for many hundreds of miles through such destructive fires, no wonder they should have become more scarce, as well as shy, by the time they reach the shores of the United States.

* *Arctic Zoology.*

Their first arrival on the coast of New Jersey is early in October, and their first numerous appearance is the sure prognostic of severe weather. Those which continue all winter frequent the shallow bays and marsh islands; their principal food being the broad tender green leaves of a marine plant which grows on stones and shells, and is usually called sea cabbage; and also the roots of the sedge, which they are frequently observed in the act of tearing up. Every few days, they make an excursion to the inlets on the beach for gravel. They cross, indiscriminately, over land or water, generally taking the nearest course to their object; differing in this respect from the brant, which will often go a great way round by water rather than cross over the land. They swim well; and, if wing-broken, dive and go a great way under water, causing the sportsman a great deal of fatigue before he can kill them. Except in very calm weather, they rarely sleep on the water, but roost all night in the marshes. When the shallow bays are frozen, they seek the mouths of inlets near the sea, occasionally visiting the air holes in the ice; but these bays are seldom so completely frozen as to prevent them from feeding on the bars.

The flight of the wild geese is heavy and laborious, generally in a straight line, or in two lines approximating to a point, thus, $\triangleright$; in both cases, the van is led by an old gander, who, every now and then, pipes his well known *honk*, as if to ask how they come on, and the honk of "all's well" is generally returned by some of the party. Their course is in a straight line, with the exception of the undulations of their flight. When bewildered in foggy weather, they appear sometimes to be in great distress, flying about in an irregular manner, and for a considerable time, over the same quarter, making a great clamour. On these occasions, should they approach the earth, and alight, which they sometimes do, to rest and recollect themselves, the only hospitality they meet with is death and destruction from a whole neighbourhood already in arms for their ruin.

Wounded geese have, in numerous instances, been completely domesticated, and readily pair with the tame gray geese. The offspring are said to be larger than either; but the characteristic marks of the wild goose still predominate. The gunners on the sea shore have long been in the practice of taming the wounded of both sexes, and have sometimes succeeded in getting them to pair and produce. The female always seeks out the most solitary place for her nest, not far from the water. On the approach of every spring, however, these birds discover symptoms of great uneasiness, frequently looking up into the air, and attempting to go off. Some whose wings have been closely cut, have travelled on foot in a northern direction, and have been found at the distance of several miles from home. They hail every flock that passes overhead, and the salute is sure to be returned by the voyagers, who are only prevented from alighting among them by the presence and habitations of man. The gunners take one or two of these domesticated geese with them to those parts of the marshes over which the wild ones are accustomed to fly; and, concealing themselves within gunshot, wait for a flight, which is no sooner perceived by the decoy geese, than they begin calling aloud, until the whole flock approaches so near as to give them an opportunity of discharging two and sometimes three loaded muskets among it, by which great havoc is made.

The wild goose, when in good order, weighs from ten to twelve, and sometimes fourteen pounds. They are sold in the Philadelphia markets at from seventy-five cents to one dollar each; and are estimated to yield half a pound of feathers a-piece, which produces twenty-five or thirty cents more.

The Canada goose is now domesticated in numerous quarters of the country, and is remarked for being extremely watchful, and more sensible of approaching changes in the atmosphere than the common gray goose. In England, France, and Germany, they have also been long ago domesticated. Buffon, in his account of this bird, observes, "within these few years, many

hundreds inhabited the great canal at Versailles, where they breed familiarly with the swans; they were oftener on the grassy margins than in the water;" and adds, "there is at present a great number of them on the magnificent pools that decorate the charming gardens of Chantilly." Thus has America already added to the stock of domestic fowls two species, the turkey and the Canada goose, superior to most in size, and inferior to none in usefulness; for it is acknowledged by an English naturalist, of good observation, that this last species "is as familiar, breeds as freely, and is in every respect as valuable as the common goose."*

The strong disposition of the wounded wild geese to migrate to the north in spring, has been already taken notice of. Instances have occurred where, their wounds having healed, they have actually succeeded in mounting into the higher regions of the air, and joined a passing party to the north; and, extraordinary as it may appear, I am well assured by the testimony of several respectable persons, who have been eye-witnesses to the fact, that they have been also known to return again in the succeeding autumn to their former habitation. These accounts are strongly corroborated by a letter which I some time ago received from an obliging correspondent at New York; which I shall here give at large, permitting him to tell his story in his own way, and conclude my history of this species:—

"Mr Platt, a respectable farmer on Long Island, being out shooting in one of the bays which, in that part of the country, abound with water-fowl, wounded a wild goose. Being wing-tipped, and unable to fly, he caught it, and brought it home alive. It proved to be a female; and, turning it into his yard, with a flock of tame geese, it soon became quite tame and familiar, and in a little time its wounded wing entirely healed. In the following spring, when the wild geese migrate to the northward, a flock passed over Mr Platt's barn yard; and, just at that moment, their leader happening

* BEWICK, vol. ii, p. 255.

to sound his bugle note, our goose, in whom its new habits and enjoyments had not quite extinguished the love of liberty, remembering the well known sound, spread its wings, mounted into the air, joined the travellers, and soon disappeared. In the succeeding autumn, the wild geese, as was usual, returned from the northward in great numbers, to pass the winter in our bays and rivers. Mr Platt happened to be standing in his yard when a flock passed directly over his barn. At that instant, he observed three geese detach themselves from the rest, and, after wheeling round several times, alight in the middle of the yard. Imagine his surprise and pleasure, when, by certain well remembered signs, he recognized in one of the three his long lost fugitive. It was she indeed! She had travelled many hundred miles to the lakes; had there hatched and reared her offspring; and had now returned with her little family, to share with them the sweets of civilized life.

“The truth of the foregoing relation can be attested by many respectable people, to whom Mr Platt has related the circumstance as above detailed. The birds were all living, and in his possession, about a year ago, and had shewn no disposition whatever to leave him.”

The length of this species is three feet; extent, five feet two inches; the bill is black; irides, dark hazel; upper half of the neck, black, marked on the chin and lower part of the head with a large patch of white, its distinguishing character; lower part of the neck before, white; back and wing-coverts, brown, each feather tipped with whitish; rump and tail, black; tail-coverts and vent, white; primaries, black, reaching to the extremity of the tail; sides, pale ashy brown; legs and feet, blackish ash.

The male and female are exactly alike in plumage.

257. *ANAS BERNICLA*, LINNÆUS AND WILSON. — THE BRANT.

WILSON, PLATE LXXII. FIG. I. — EDINBURGH COLLEGE MUSEUM.

THE brant, or, as it is usually written, *brent*, is a bird well known on both continents, and celebrated in former times throughout Europe for the singularity of its origin, and the strange transformations it was supposed to undergo previous to its complete organization. Its first appearance was said to be in the form of a barnacle shell adhering to old water-soaked logs, trees, or other pieces of wood taken from the sea. Of this goose-bearing tree, Gerard, in his *Herbal*, published in 1597, has given a formal account, and seems to have reserved it for the conclusion of his work as being the most wonderful of all he had to describe. The honest naturalist, however, though his belief was fixed, acknowledges that his own personal information was derived from certain shells which adhered to a rotten tree that he dragged out of the sea between Dover and Romney, in England; in some of which he found "living things without forme or shape; in others which were nearer come to ripeness, living things that were very naked, in shape like a birde; in others, the birds covered with soft downe, the shell half open, and the birde readie to fall out, which no doubt were the foules called Barnakles."* Ridiculous and chimerical as this notion was, it had many advocates, and was at that time as generally believed, and with about as much reason too, as the present opinion of the annual submersion of swallows, so tenaciously insisted on by some of our philosophers, and which, like the former absurdity, will in its turn disappear before the penetrating radiance and calm investigation of truth.

The brant and barnacle goose, though generally reckoned two different species, I consider to be the same. Among those large flocks that arrive on our coasts about the beginning of October, individuals

* See GERARD'S *Herbal*, Art. Goose-bearing Tree.

frequently occur corresponding in their markings with that called the barnacle of Europe, that is, in having the upper parts lighter, and the front, cheeks, and chin whitish. These appear evidently a variety of the brant, probably young birds: what strengthens this last opinion is the fact, that none of them are found so marked on their return northward in the spring.

The brant is expected at Egg Harbour, on the coast of New Jersey, about the 1st of October, and has been sometimes seen as early as the 20th of September. The first flocks generally remain in the bay a few days, and then pass on to the south. On recommencing their journey, they collect in one large body, and, making an extensive spiral course, some miles in diameter, rise to a great height in the air, and then steer for the sea, over which they uniformly travel; often making wide circuits to avoid passing over a projecting point of land. In these aerial routes, they have been met with many leagues from shore, travelling the whole night. Their line of march very much resembles that of the Canada goose, with this exception, that frequently three or four are crowded together in the front, as if striving for precedence. Flocks continue to arrive from the north, and many remain in the bay till December, or until the weather becomes very severe, when these also move off southwardly. During their stay, they feed on the bars at low water, seldom or never in the marshes; their principal food being a remarkably long and broad-leaved marine plant, of a bright green colour, which adheres to stones, and is called, by the country people, sea cabbage; the leaves of this are sometimes eight or ten inches broad, by two or three feet in length: they also eat small shell-fish. They never dive, but wade about, feeding at low water. During the time of high water, they float in the bay in long lines, particularly in calm weather. Their voice is hoarse and honking, and, when some hundreds are screaming together, reminds one of a pack of hounds in full cry. They often quarrel among themselves, and with the ducks, driving the latter off their feeding ground. Though it never dives in search

of food, yet, when wing-broken, the brant will go one hundred yards at a stretch under water; and is considered, in such circumstances, one of the most difficult birds to kill. About the 15th or 20th of May, they reappear on their way north; but seldom stop long, unless driven in by tempestuous weather.

The breeding place of the brant is supposed to be very far to the north. They are common at Hudson's Bay, very numerous in winter on the coasts of Holland and Ireland; are called in Shetland Harra geese, from their frequenting the sound of that name; they also visit the coast of England. Buffon relates, that in the severe winters of 1740 and 1765, during the prevalence of a strong north wind, the brant visited the coast of Picardy, in France, in prodigious multitudes, and committed great depredations on the corn, tearing it up by the roots, trampling, and devouring it; and, notwithstanding the exertions of the inhabitants, who were constantly employed in destroying them, they continued in great force until a change of weather carried them off.

The brant generally weighs about four pounds avoirdupois, and measures two feet in length, and three feet six inches in extent; the bill is about an inch and a half long, and black; the nostril large, placed nearly in its middle; head, neck, and breast, black, the neck marked with a spot of white, about two inches below the eye; belly, pale ash, edged with white; from the thighs backwards, white; back and wing-coverts, dusky brownish black, the plumage lightest at the tips; rump and middle of the tail-coverts, black; the rest of the tail-coverts, pure white, reaching nearly to the tip of the tail, the whole of which is black, but usually concealed by the white coverts; primaries and secondaries, deep black; legs, also black; irides, dark hazel.

The only material difference observable between the plumage of the male and female, is, that in the latter the white spot on the neck is less, and more mottled with dusky. In young birds it is sometimes wanting, or occurs on the front, cheeks, and chin; and sometimes

the upper part of the neck only is black ;* but in full plumaged birds of both sexes, the markings are very much alike.

The brant is often seen in our markets for sale. Its flesh, though esteemed by many, tastes somewhat sedgy, or fishy.

SUBGENUS II. — *ANAS*, BREHM.

258. *ANAS CLYPEATA*, LINNÆUS AND WILSON. — SHOVELLER.

WILSON, PLATE LXVII. FIG. VII. — EDINBURGH COLLEGE MUSEUM.

IF we except the singularly formed and disproportionate size of the bill, there are few ducks more beautiful or more elegantly marked than this. The excellence of its flesh, which is uniformly juicy, tender, and well tasted, is another recommendation to which it is equally entitled. It occasionally visits the sea coast, but is more commonly found on our lakes and rivers, particularly along their muddy shores, where it spends great part of its time in searching for small worms, and the larvæ of insects, sifting the watery mud through the long and finely set teeth of its curious bill, which is admirably constructed for the purpose, being large, to receive a considerable quantity of matter, each mandible bordered with close-set, pectinated rows, exactly resembling those of a weaver's reed, which, fitting into each other, form a kind of sieve, capable of retaining very minute worms, seeds, or insects, which constitute the principal food of the bird.

The shoveller visits us only in the winter, and is not known to breed in any part of the United States. It is a common bird of Europe, and, according to M. Baillon, the correspondent of Buffon, breeds yearly in the marshes in France. The female is said to make her nest on the ground, with withered grass, in the midst of the largest tufts of rushes or coarse herbage, in the

* The figure of this bird, given by Bewick, is in that state.

most inaccessible part of the slaky marsh, and lays ten or twelve pale rust coloured eggs; the young, as soon as hatched, are conducted to the water by the parent birds. They are said to be at first very shapeless and ugly, for the bill is then as broad as the body, and seems too great a weight for the little bird to carry. Their plumage does not acquire its full colours until after the second moult.

The blue-winged shoveller is twenty inches long, and two feet six inches in extent; the bill is brownish black, three inches in length, greatly widened near the extremity, closely pectinated on the sides, and furnished with a nail on the tip of each mandible; irides, bright orange; tongue, large and fleshy; the inside of the upper and outside of the lower mandible are grooved, so as to receive distinctly the long separated reedlike teeth; there is also a gibbosity in the two mandibles, which do not meet at the sides, and this vacuity is occupied by the sifters just mentioned; head and upper half of the neck, glossy, changeable green; rest of the neck and breast, white, passing round and nearly meeting above; whole belly, dark reddish chestnut; flanks, a brownish yellow, penciled transversely with black, between which and the vent, which is black, is a band of white; back, blackish brown; exterior edges of the scapulars, white; lesser wing-coverts, and some of the tertials, a fine light sky blue; beauty spot on the wing, a changeable resplendent bronze green, bordered above by a band of white, and below with another of velvety black; rest of the wing, dusky, some of the tertials streaked down their middles with white; tail, dusky, pointed, broadly edged with white; legs and feet, reddish orange, hind toe not finned.

With the above another was shot, which differed in having the breast spotted with dusky, and the back with white; the green plumage of the head intermixed with gray, and the belly with circular touches of white, evidently a young male in its imperfect plumage.

The female has the crown of a dusky brown; rest of the head and neck, yellowish white, thickly spotted with

dark brown; these spots on the breast become larger, and crescent shaped; back and scapulars, dark brown, edged and centred with yellow ochre; belly, slightly rufous, mixed with white; wing, nearly as in the male.

On dissection, the labyrinth in the windpipe of the male was found to be small; the trachea itself seven inches long; the intestines nine feet nine inches in length, and about the thickness of a crow quill.

259. *ANAS BOSCHAS*, LINNÆUS. — THE MALLARD.

WILSON, PLATE LXX. FIG. VII — EDINBURGH COLLEGE MUSEUM.

THE mallard, or common wild drake, is so universally known as scarcely to require a description. It measures twenty-four inches in length, by three feet in extent, and weighs upwards of two pounds and a half; the bill is greenish yellow; irides, hazel; head and part of the neck, deep glossy changeable green, ending in a narrow collar of white; the rest of the neck and breast are of a dark purplish chestnut; lesser wing-coverts, brown ash, greater crossed near the extremities with a band of white, and tipped with another of deep velvety black; below this lies the speculum, or beauty spot, of a rich and splendid light purple, with green and violet reflections, bounded on every side with black; quills, pale brownish ash; back, brown, skirted with paler; scapulars, whitish, crossed with fine undulating lines of black; rump and tail-coverts, black, glossed with green; tertials, very broad, and pointed at the ends; tail, consisting of eighteen feathers, whitish, centred with brown ash, the four middle ones excepted, which are narrow, black, glossed with violet, remarkably concave, and curled upwards to a complete circle; belly and sides, a fine gray, crossed by an infinite number of fine waving lines, stronger and more deeply marked as they approach the vent; legs and feet, orange red.

The female has the plumage of the upper parts dark brown, broadly bordered with brownish yellow; and the lower parts yellow ochre, spotted and streaked with

deep brown ; the chin and throat for about two inches, plain yellowish white ; wings, bill, and legs, nearly as in the male.

The windpipe of the male has a bony labyrinth, or bladder-like knob, puffing out from the left side. The intestines measure six feet, and are as wide as those of the *canvass back*. The windpipe is of uniform diameter until it enters the labyrinth.

This is the original stock of the common domesticated duck, reclaimed, time immemorial, from a state of nature, and now become so serviceable to man. In many individuals, the general garb of the tame drake seems to have undergone little or no alteration ; but the stamp of slavery is strongly imprinted in his dull indifferent eye and grovelling gait, while the lofty look, long tapering neck, and sprightly action of the former, bespeak his native spirit and independence.

The common wild duck is found in every fresh water lake and river of the United States in winter, but seldom frequents the sea shores or salt marshes. Their summer residence is the north, the great nursery of this numerous genus. Instances have been known of some solitary pairs breeding here in autumn. In England these instances are more common. The nest is usually placed in the most solitary recesses of the marsh, or bog, amidst coarse grass, reeds, and rushes, and generally contains from twelve to sixteen eggs of a dull greenish white. The young are led about by the mother in the same manner as those of the tame duck, but with a superior caution, a cunning and watchful vigilance peculiar to her situation. The male attaches himself to one female, as among other birds in their native state, and is the guardian and protector of her and her feeble brood. The mallard is numerous in the rice fields of the Southern States during winter, many of the fields being covered with a few inches of water ; and, the scattered grains of the former harvest lying in abundance, the ducks swim about and feed at pleasure.

The flesh of the common wild duck is in general and high estimation ; and the ingenuity of man, in every

country where it frequents, has been employed in inventing stratagems to overreach these wary birds, and procure a delicacy for the table. To enumerate all these various contrivances would far exceed our limits; a few, however, of the most simple and effective may be mentioned.

In some ponds frequented by these birds, five or six wooden figures, cut and painted so as to represent ducks, and sunk, by pieces of lead nailed on their bottoms, so as to float at the usual depth on the surface, are anchored in a favourable position for being raked from a concealment of brush, &c. on shore. The appearance of these usually attracts passing flocks, which alight, and are shot down. Sometimes eight or ten of these painted wooden ducks are fixed on a frame in various swimming postures, and secured to the bow of the gunner's skiff, projecting before it in such a manner that the weight of the frame sinks the figures to their proper depth; the skiff is then dressed with sedge or coarse grass in an artful manner, as low as the water's edge; and under cover of this, which appears like a party of ducks swimming by a small island, the gunner floats down sometimes to the very skirts of a whole congregated multitude, and pours in a destructive and repeated fire of shot among them. In winter, when detached pieces of ice are occasionally floating in the river, some of the gunners on the Delaware paint their whole skiff or canoe white, and, laying themselves flat at the bottom, with their hand over the side, silently managing a small paddle, direct it imperceptibly into or near a flock, before the ducks have distinguished it from a floating mass of ice, and generally do great execution among them. A whole flock has sometimes been thus surprised asleep, with their heads under their wings. On land, another stratagem is sometimes practised with great success. A large tight hogshead is sunk in the flat marsh, or mud, near the place where ducks are accustomed to feed at low water, and where otherwise there is no shelter; the edges and tops are artfully concealed with tufts of long coarse grass and reeds or

sedge. From within this the gunner, unseen and unsuspected, watches his collecting prey, and, when a sufficient number offers, sweeps them down with great effect. The mode of catching wild ducks, as practised in India,* China,† the island of Ceylon, and some parts of South America,‡ has been often described, and seems, if reliance may be placed on those accounts, only practicable in water of a certain depth. The sportsman, covering his head with a hollow wooden vessel or calabash, pierced with holes to see through, wades into the water, keeping his head only above, and, thus disguised, moves in among the flock, which take the appearance to be a mere floating calabash, while, suddenly pulling them under by the legs, he fastens them to his girdle, and thus takes as many as he can conveniently stow away, without in the least alarming the rest. They are also taken with snares made of horse hair, or with hooks baited with small pieces of sheep's lights, which, floating on the surface, are swallowed by the ducks, and with them the hooks. They are also approached under cover of a stalking horse, or a figure formed of thin boards, or other proper materials, and painted so as to represent a horse or ox. But all these methods require much watching, toil, and fatigue, and their success is but trifling when compared with that of the decoy now used both in France and England,§ which, from its superiority over every other mode, is well deserving the attention of persons of this country residing in the neighbourhood of extensive marshes frequented by wild ducks, as, by this method, mallard and other kinds may be taken by thousands at a time. The following circumstantial account of these decoys, and the manner of taking wild ducks in them in England, is extracted from Bewick's *History of British Birds*, vol. ii, p. 294 :

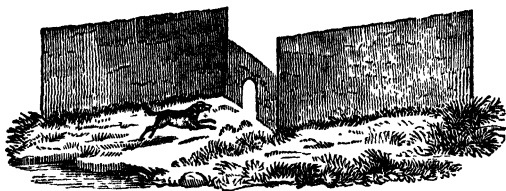
* *Naval Chronicle*, vol. ii, p. 473.

† Du HALDE, *History of China*, vol. ii, p. 142.

‡ ULLOA'S *Voyage*, i, p. 53.

§ Particularly in Picardy, in the former country, and Lincolnshire in the latter.

“In the lakes where they resort,” says the correspondent of that ingenious author, “the most favourite haunts of the fowl are observed: then, in the most sequestered part of this haunt, they cut a ditch about four yards across at the entrance, and about fifty or sixty yards in length, decreasing gradually in width from the entrance to the farther end, which is not more than two feet wide. It is of a circular form, but not bending much for the first ten yards. The banks of the lake, for about ten yards on each side of this ditch (or pipe, as it is called) are kept clear from reeds, coarse herbage, &c. in order that the fowl may get on them to sit and dress themselves. Across this ditch, poles on each side, close to the edge of the ditch, are driven into the ground, and the tops bent to each other and tied fast. These poles at the entrance form an arch, from the top of which to the water is about ten feet. This arch is made to decrease in height, as the ditch decreases in width, till the farther end is not more than eighteen inches in height. The poles are placed about six feet from each other, and connected together by poles laid lengthwise across the arch and tied together. Over them a net, with meshes sufficiently small to prevent the fowl getting through, is thrown across, and made fast to a reed fence at the entrance, and nine or ten yards up the ditch, and afterwards strongly pegged to the ground. At the farther end of the pipe, a tunnel net, as it is called, is fixed, about four yards in length, of a round form, and kept open by a number of hoops about eighteen inches in diameter, placed at a small distance from each other, to keep it distended. Supposing the circular bend of the pipe to be to the right, when you stand with your back to the lake, on the left hand side a number of reed fences are constructed, called shootings, for the purpose of screening from sight the decoy-man, and in such a manner, that the fowl in the decoy may not be alarmed while he is driving those in the pipe: these shootings are about four yards in length, and about six feet high, and are ten in number. They are placed in the following manner—



From the end of the last shooting, a person cannot see the lake, owing to the bend of the pipe : there is then no farther occasion for shelter. Were it not for those shootings, the fowl that remain about the mouth of the pipe would be alarmed, if the person driving the fowl already under the net should be exposed, and would become so shy as to forsake the place entirely. The first thing the decoy-man does when he approaches the pipe, is to take a piece of lighted turf or peat, and hold it near his mouth, to prevent the fowl smelling him. He is attended by a dog taught for the purpose of assisting him : he walks very silently about half way up the shootings, where a small piece of wood is thrust through the reed fence, which makes an aperture just sufficient to see if any fowl are in ; if not, he walks forward to see if any are about the mouth of the pipe. If there are, he stops and makes a motion to his dog, and gives him a piece of cheese or something to eat ; upon receiving it he goes directly to a hole through the reed fence, (No. 1,) and the fowl immediately fly off the bank into the water ; the dog returns along the bank, between the reed fences and the pipe, and comes out to his master at the hole (No. 2.) The man now gives him another reward, and he repeats his round again, till the fowl are attracted by the motions of the dog, and follow him into the mouth of the pipe. This operation is called working them. The man now retreats farther back, working the dog at different holes till the fowl are sufficiently under the net : he now commands his dog to lie down still behind the fence,

and goes forward to the end of the pipe next the lake, where he takes off his hat and gives it a wave between the shooting; all the fowl under the net can see him, but none that are in the lake can. The fowl that are in sight fly forward; and the man runs forward to the next shooting and waves his hat, and so on, driving them along till they come to the tunnel net, where they creep in: when they are all in, he gives the net a twist, so as to prevent their getting back: he then takes the net off from the end of the pipe with what fowl he may have caught, and takes them out, one at a time, and dislocates their necks, and hangs the net on again; and all is ready for working again.



REFERENCES TO THE CUT.

- No. 1. Dog's hole, where he goes to unbank the fowl.
2. Reed fences on each side of the mouth of the pipe.
3. Where the decoy-man shews himself to the fowl first, and afterwards at the end of every shooting.
4. Small reed fence to prevent the fowl seeing the dog when he goes to unbank them.
5. The shootings.
6. Dog's holes between the shootings, used when working.
7. Tunnel net at the end of the pipe.
8. Mouth of the pipe.

"In this manner, five or six dozen have been taken at one drift. When the wind blows directly in or out of the pipe, the fowl seldom work well, especially when it blows in. If many pipes are made in a lake, they should be so constructed as to suit different winds.

"Duck and mallard are taken from August to June; teal or wigeon from October to March; becks, smee, golden eyes, arps, cricks, and pintails or sea pheasants, in March and April.

"Poker ducks are seldom taken, on account of their diving and getting back in the pipe.

"It may be proper to observe here, that the ducks feed during the night, and that all is ready prepared for this sport in the evening. The better to entice the ducks into the pipe, hemp seed is strewed occasionally on the water. The season allowed, by act of Parliament, for catching these birds in this way, is from the latter end of October till February.

"Particular spots, or decoys, in the fen countries are let to the fowlers at a rent of from five to thirty pounds per annum; and Pennant instances a season in which thirty-one thousand two hundred ducks, including teals and wigeons, were sold in London only, from ten of these decoys near Wainfleet, in Lincolnshire. Formerly, according to Willoughby, the ducks while in moult, and unable to fly, were driven by men in boats, furnished with long poles, with which they splashed the water between long nets, stretched vertically across the pools, in the shape of two sides of a triangle, into lesser nets placed at the point; and, in this way, he says, four thousand were taken at one driving in Deeping-Fen; and Latham has quoted an instance of two thousand six hundred and forty-six being taken in two days, near Spalding, in Lincolnshire; but this manner of catching them, while in moult, is now prohibited."

260. *ANAS STREPERA*, LINN. AND WILSON. — THE GADWALL.

WILSON, PLATE LXXI. FIG. I. — EDINBURGH COLLEGE MUSEUM.

THIS beautiful duck I have met with in very distant parts of the United States, viz. on the Seneca Lake, in New York, about the 20th of October, and at Louisville, on the Ohio, in February. I also shot it near Big Bone Lick, in Kentucky. With its particular manners or breeding place, I am altogether unacquainted.

The length of this species is twenty inches; extent, thirty-one inches; bill, two inches long, formed very much like that of the mallard, and of a brownish black; crown, dusky brown; rest of the upper half of the neck, brownish white, both thickly speckled with black; lower part of the neck and breast, dusky black, elegantly ornamented with large concentric semicircles of white; scapulars, waved with lines of white on a dusky ground, but narrower than that of the breast; primaries, ash; greater wing-coverts, black, and several of the lesser coverts, immediately above, chestnut red; speculum, white, bordered below with black, forming three broad bands on the wing of chestnut, black, and white; belly, dull white; rump and tail-coverts, black, glossed with green; tail, tapering, pointed, of a pale brown ash, edged with white; flanks, dull white, elegantly waved; tertials, long, and of a pale brown; legs, orange red.

The female I have never seen. Latham describes it as follows: "Differs in having the colours on the wings duller, though marked the same as the male; the breast, reddish brown, spotted with black; the feathers on the neck and back, edged with pale red; rump, the same, instead of black; and those elegant semicircular lines on the neck and breast wholly wanting."

The flesh of this duck is excellent, and the windpipe of the male is furnished with a large labyrinth.

The gadwall is very rare in the northern parts of the United States; is said to inhabit England in winter,

and various parts of France and Italy; migrates to Sweden, and is found throughout Russia and Siberia.*

It is a very quick diver, so as to make it difficult to be shot; flies also with great rapidity, and utters a note not unlike that of the mallard, but louder. Is fond of salines and ponds overgrown with reeds and rushes. Feeds during the day, as well as in the morning and evening.

261. *ANAS ACUTA*, LINNÆUS AND WILSON. — PINTAIL DUCK.

WILSON, PLATE LXVIII. FIG. III. — EDINBURGH COLLEGE MUSEUM.

THE pintail, or, as it is sometimes called, the sprigtail, is a common and well known duck in our markets, much esteemed for the excellence of its flesh, and is generally in good order. It is a shy and cautious bird, feeds in the mud flats, and shallow fresh water marshes; but rarely resides on the sea coast. It seldom dives, is very noisy, and has a kind of chattering note. When wounded, they will sometimes dive, and, coming up, conceal themselves under the bow of the boat, moving round as it moves. Are vigilant in giving the alarm on the approach of the gunner, who often curses the watchfulness of the sprigtail. Some ducks, when aroused, disperse in different directions; but the sprig-tails, when alarmed, cluster confusedly together as they mount, and thereby afford the sportsman a fair opportunity of raking them with advantage. They generally leave the Delaware about the middle of March, on the way to their native regions, the north, where they are most numerous. They inhabit the whole northern parts of Europe and Asia, and, doubtless, the corresponding latitudes of America. Are said, likewise, to be found in Italy. Great flocks of them are sometimes spread along the isles and shores of Scotland and Ireland, and on the interior lakes of both these countries. On the

* LATHAM.

marshy shores of some of the bays of Lake Ontario they are often plenty in the months of October and November. I have also met with them at Louisville, on the Ohio.

The pintail duck is twenty-six inches in length, and two feet ten inches in extent; the bill, is a dusky lead colour; irides, dark hazel; head and half of the neck, pale brown, each side of the neck marked with a band of purple violet, bordering the white; hind part of the upper half of the neck, black, bordered on each side by a stripe of white, which spreads over the lower part of the neck before; sides of the breast and upper part of the back, white, thickly and elegantly marked with transverse undulating lines of black, here and there tinged with pale buff; throat and middle of the belly, white, tinged with cream; flanks, finely penciled with waving lines; vent, white; under tail-coverts, black; lesser wing-coverts, brown ash; greater, the same, tipped with orange; below which is the speculum, or beauty spot, of rich golden green, bordered below with a band of black, and another of white; primaries, dusky brown; tertials, long, black, edged with white, and tinged with rust; rump and tail-coverts, pale ash, centred with dark brown; tail, greatly pointed, the two middle tapering feathers being full five inches longer than the others, and black, the rest, brown ash, edged with white; legs, a pale lead colour.

The female has the crown of a dark brown colour; neck, of a dull brownish white, thickly speckled with dark brown; breast and belly, pale brownish white, interspersed with white; back, and root of the neck above, black, each feather elegantly waved with broad lines of brownish white, these wavings become rufous on the scapulars; vent, white, spotted with dark brown; tail, dark brown, spotted with white; the two middle tail-feathers half an inch longer than the others.

The sprigtail is an elegantly formed, long bodied duck, the neck longer and more slender than most others.

262. *ANAS AMERICANA*, GMELIN AND WILSON.

AMERICAN WIDGEON.

WILSON, PLATE LXIX. FIG. IV.

THIS is a handsomely marked and sprightly species, very common in winter along our whole coast, from Florida to Rhode Island; but most abundant in Carolina, where it frequents the rice plantations. In Martinico, great flocks take short flights from one rice field to another, during the rainy season, and are much complained of by the planters. The widgeon is the constant attendant of the celebrated canvass-back duck, so abundant in various parts of the Chesapeake Bay, by the aid of whose labour he has ingenuity enough to contrive to make a good subsistence. The widgeon is extremely fond of the tender roots of that particular species of aquatic plant on which the canvass-back feeds, and for which that duck is in the constant habit of diving. The widgeon, who never dives, watches the moment of the canvass-back's rising, and, before he has his eyes well opened, snatches the delicious morsel from his mouth and makes off. On this account the canvass-backs and widgeons, or, as they are called round the bay, bald pates, live in a state of perpetual contention; The only chance the latter have is to retreat, and make their approaches at convenient opportunities. They are said to be in great plenty at St Domingo and Cayenne, where they are called vingeon, or gingeon. are said sometimes to perch on trees; feed in company, and have a sentinel on the watch, like some other birds. They feed little during the day; but in the evenings come out from their hiding places, and are then easily traced by their particular whistle, or *whew whew*. This soft note, or whistle, is frequently imitated with success, to entice them within gunshot. They are not known to breed in any part of the United States. Are common in the winter months along the bays of Egg Harbour and Cape May, and also those of the Delaware. They leave these places in April, and appear upon the coasts

of Hudson's Bay in May, as soon as the thaws come on, chiefly in pairs; lay there only from six to eight eggs; and feed on flies and worms in the swamps; depart in flocks in autumn.*

These birds are frequently brought to the market of Baltimore, and generally bring a good price, their flesh being excellent. They are of a lively frolicsome disposition, and, with proper attention, might easily be domesticated.

The widgeon, or bald pate, measures twenty-two inches in length, and thirty inches in extent; the bill, is of a slate colour, the nail, black; the front and crown, cream coloured, sometimes nearly white, the feathers, inflated; from the eye backwards to the middle of the neck behind, extends a band of deep glossy green, gold, and purple; throat, chin, and sides of the neck before, as far as the green extends, dull yellowish white, thickly speckled with black; breast and hind part of the neck, hoary bay, running in under the wings, where it is crossed with fine waving lines of black, whole belly, white; vent, black; back and scapulars, black, thickly and beautifully crossed with undulating lines of vinous bay; lower part of the back, more dusky; tail-coverts, long, pointed, whitish, crossed as the back; tail, pointed, brownish ash; the two middle feathers an inch longer than the rest, and tapering; shoulder of the wing, brownish ash; wing-coverts, immediately below, white, forming a large spot; primaries, brownish ash, middle secondaries black, glossed with green, forming the speculum; tertials, black, edged with white, between which and the beauty spot several of the secondaries are white.

The female has the whole head and neck yellowish white, thickly speckled with black, very little rufous on the breast; the back is dark brown. The young males, as usual, very much like the females during the first season, and do not receive their full plumage until the second year. They are also subject to a regular change every spring and autumn.

263. *ANAS OBSCURA*, GMELIN AND WILSON. — DUSKY DUCK.

WILSON, PLATE LXXII. FIG. V.

THIS species is generally known along the sea coast of New Jersey, and the neighbouring country, by the name of the black duck, being the most common and most numerous of all those of its tribe, that frequent the salt marshes. It is only partially migratory. Numbers of them remain during the summer, and breed in sequestered places in the marsh, or on the sea islands of the beach. The eggs are eight or ten in number, very nearly resembling those of the domestic duck. Vast numbers, however, regularly migrate farther north on the approach of spring. During their residence here in winter they frequent the marshes, and the various creeks and inlets with which those extensive flats are intersected. Their principal food consists of those minute snail shells so abundant in the marshes. They occasionally visit the sandy beach in search of small bivalves, and, on these occasions, sometimes cover whole acres with their numbers. They roost at night in the shallow ponds, in the middle of the salt marsh, particularly on islands, where many are caught by the foxes. They are extremely shy during the day; and on the most distant report of a musket, rise from every quarter of the marsh in prodigious numbers, dispersing in every direction. In calm weather they fly high, beyond the reach of shot; but when the wind blows hard, and the gunner conceals himself among the salt grass, in a place over which they usually fly, they are shot down in great numbers; their flight being then low. Geese, brant, and black duck, are the common game of all our gunners along this part of the coast during winter; but there are at least ten black duck for one goose or brant, and probably many more. Their voice resembles that of the duck and mallard; but their flesh is greatly inferior, owing to the nature of their food. They are, however, large, heavy bodied ducks, and generally esteemed.

I cannot discover that this species is found in any of the remote northern parts of our continent; and this is probably the cause why it is altogether unknown in Europe. It is abundant from Florida to New England; but is not enumerated among the birds of Hudson's Bay, or Greenland. Its chief residence is on the sea coast, though it also makes extensive excursions up the tide waters of our rivers. Like the mallard, they rarely dive for food, but swim and fly with great velocity.

The dusky, or black duck, is two feet in length, and three feet two inches in extent; the bill, is of a dark greenish ash, formed very much like that of the mallard, and nearly of the same length; irides, dark; upper part of the head, deep dusky brown, intermixed on the fore part with some small streaks of drab; rest of the head and greater part of the neck, pale yellow ochre, thickly marked with small streaks of blackish brown; lower part of the neck, and whole lower parts, deep dusky, each feather edged with brownish white, and with fine seams of rusty white; upper parts, the same, but rather deeper; the outer vanes of nine of the secondaries, bright violet blue, forming the beauty spot, which is bounded on all sides by black; wings and tail, sooty brown; tail-feathers, sharp pointed; legs and feet, dusky yellow; lining of the wings, pure white.

The female has more brown on her plumage; but in other respects differs little from the male, both having the beauty spot on the wing.

264. *ANAS SPONSA*, LINNÆUS AND WILSON.

SUMMER DUCK, OR WOOD DUCK.

WILSON, PLATE LXX. FIG. III. — EDINBURGH COLLEGE MUSEUM.

THIS most beautiful of all our ducks has probably no superior among its whole tribe for richness and variety of colours. It is called the wood duck, from the circumstance of its breeding in hollow trees; and the summer duck, from remaining with us chiefly during the

summer. It is familiarly known in every quarter of the United States, from Florida to Lake Ontario, in the neighbourhood of which latter place I have myself met with it in October. It rarely visits the sea shore, or salt marshes, its favourite haunts being the solitary, deep, and muddy creeks, ponds, and mill dams of the interior, making its nest frequently in old hollow trees that overhang the water.

The summer duck is equally well known in Mexico and many of the West India Islands. During the whole of our winters, they are occasionally seen in the States south of the Potowmac. On the 10th of January I met with two on a creek near Petersburg in Virginia. In the more northern districts, however, they are migratory. In Pennsylvania the female usually begins to lay late in April or early in May. Instances have been known where the nest was constructed of a few sticks laid in a fork of the branches; usually, however, the inside of a hollow tree is selected for this purpose. On the 18th of May I visited a tree containing the nest of a summer duck, on the banks of Tuckahoe river, New Jersey. It was an old grotesque white oak, whose top had been torn off by a storm. It stood on the declivity of the bank, about twenty yards from the water. In this hollow and broken top, and about six feet down, on the soft decayed wood, lay thirteen eggs, snugly covered with down, doubtless taken from the breast of the bird. These eggs were of an exact oval shape, less than those of a hen, the surface exceedingly fine grained, and of the highest polish and slightly yellowish, greatly resembling old polished ivory. The egg measured two inches and an eighth by one inch and a half. On breaking one of them, the young bird was found to be nearly hatched, but dead, as neither of the parents had been observed about the tree during the three or four days preceding, and were conjectured to have been shot.

This tree had been occupied, probably by the same pair, for four successive years, in breeding time; the person who gave me the information, and whose house was within twenty or thirty yards of the tree, said that

he had seen the female, the spring preceding, carry down thirteen young, one by one, in less than ten minutes. She caught them in her bill by the wing or back of the neck, and landed them safely at the foot of the tree, whence she afterwards led them to the water. Under this same tree, at the time I visited it, a large sloop lay on the stocks, nearly finished, the deck was not more than twelve feet distant from the nest, yet notwithstanding the presence and noise of the workmen, the ducks would not abandon their old breeding place, but continued to pass out and in, as if no person had been near. The male usually perched on an adjoining limb, and kept watch while the female was laying, and also often while she was sitting. A tame goose had chosen a hollow space at the root of the same tree, to lay and hatch her young in.

The summer duck seldom flies in flocks of more than three or four individuals together, and most commonly in pairs, or singly. The common note of the drake is *peet, peet*; but when, standing sentinel, he sees danger, he makes a noise not unlike the crowing of a young cock, *oe eek! oe eek!* Their food consists principally of acorns, seeds of the wild oats, and insects. Their flesh is inferior to that of the blue-winged teal. They are frequent in the markets of Philadelphia.

Among other gaudy feathers with which the Indians ornament the calumet or pipe of peace, the skin of the head and neck of the summer duck is frequently seen covering the stem.

This beautiful bird has often been tamed, and soon becomes so familiar as to permit one to stroke its back with the hand. I have seen individuals so tamed in various parts of the Union. Captain Boyer, collector of the port of Havre-de-Grace, informs me, that about forty years ago, a Mr Nathan Nicols, who lived on the west side of Gunpowder Creek, had a whole yard swarming with summer ducks, which he had tamed and completely domesticated, so that they bred and were as familiar as any other tame fowls; that he (Captain Boyer) himself saw them in that state, but does no

know what became of them. Latham says that they are often kept in European menageries, and will breed there.*

The wood duck is nineteen inches in length, and two feet four inches in extent; bill, red, margined with black; a spot of black lies between the nostrils, reaching nearly to the tip, which is also of the same colour, and furnished with a large hooked nail; irides, orange red; front, crown, and pendent crest, rich glossy bronze green, ending in violet, elegantly marked with a line of pure white running from the upper mandible over the eye, and with another band of white proceeding from behind the eye, both mingling their long pendent plumes with the green and violet ones, producing a rich effect; cheeks and sides of the upper neck, violet; chin, throat, and collar round the neck, pure white, curving up in the form of a crescent nearly to the posterior part of the eye; the white collar is bounded below with black; breast, dark violet brown, marked on the fore part with minute triangular spots of white, increasing in size until they spread into the white of the belly; each side of the breast is bounded by a large crescent of white, and that again by a broader one of deep black; sides under the wings thickly and beautifully marked with fine undulating parallel lines of black on a ground of yellowish drab; the flanks are ornamented with broad alternate semicircular bands of black and white; sides of the vent, rich light violet; tail-coverts, long, of a hair-like texture at the sides, over which they descend, and of a deep black, glossed with green; back, dusky bronze, reflecting green; scapulars, black; tail, tapering, dark glossy green above, below dusky; primaries, dusky, silvery hoary without, tip with violet blue; secondaries greenish blue, tip with white; wing-coverts, violet blue, tip with black; vent, dusky; legs and feet, yellowish red; claws, strong and hooked.

The above is as accurate a description as I can give of a very perfect specimen now before me.

* *General Synopsis*, iii, p. 547.

The female has the head slightly crested; crown, dark purple; behind the eye, a bar of white; chin and throat, for two inches, also white; head and neck, dark drab; breast, dusky brown, marked with large triangular spots of white; back, dark glossy bronze brown, with some gold and greenish reflections. Speculum of the wings nearly the same as in the male, but the fine penciling of the sides, and the long hair-like tail-coverts, are wanting; the tail is also shorter.

265. *ANAS DISCORS*, LINNÆUS AND WILSON.

BLUE-WINGED TEAL.

WILSON, PLATE LXVIII. FIG. IV.—EDINBURGH COLLEGE MUSEUM.

THE blue-winged teal is the first of its tribe that returns to us in the autumn from its breeding place in the north. They are usually seen early in September, along the shores of the Delaware, where they sit on the mud close to the edge of the water, so crowded together that the gunners often kill great numbers at a single discharge. When a flock is discovered thus sitting and sunning themselves, the experienced gunner runs his batteau ashore at some distance below or above them, and, getting out, pushes her before him over the slippery mud, concealing himself all the while behind her; by this method he can sometimes approach within twenty yards of the flock, among which he generally makes great slaughter. They fly rapidly, and, when they alight, drop down suddenly, like the snipe or woodcock, among the reeds or on the mud. They feed chiefly on vegetable food, and are eagerly fond of the seeds of the reeds or wild oats. Their flesh is excellent, and, after their residence for a short time among the reeds, becomes very fat. As the first frosts come on, they proceed to the south, being a delicate bird, very susceptible of cold. They abound in the inundated rice fields in the Southern States, where vast numbers are taken in traps placed on small dry eminences that here and there rise above the water. These places are strewed

with rice, and by the common contrivance called a *figure four*, they are caught alive in hollow traps. In the month of April they pass through Pennsylvania for the north, but make little stay at that season. I have observed them numerous on the Hudson opposite to the Katskill Mountains. They rarely visit the sea shore.

This species measures about fourteen inches in length, and twenty-two inches in extent; the bill is long in proportion, and of a dark dusky slate; the front and upper part of the head, are black, from the eye to the chin is a large crescent of white, the rest of the head and half the neck are of a dark slate, richly glossed with green and violet, remainder of the neck and breast is black or dusky, thickly marked with semicircles of brownish white, elegantly intersecting each other; belly, pale brown, barred with dusky, in narrow lines; sides and vent, the same tint, spotted with oval marks of dusky; flanks elegantly waved with large semicircles of pale brown; sides of the vent pure white; under tail-coverts, black; back, deep brownish black, each feather waved with large semiovals of brownish white; lesser wing-coverts, a bright light blue; primaries, dusky brown; secondaries, black; speculum, or beauty spot, rich green; tertials, edged with black or light blue, and streaked down their middle with white; the tail, which is pointed, extends two inches beyond the wings; legs and feet, yellow, the latter very small; the two crescents of white, before the eyes, meet on the throat.

The female differs in having the head and neck of a dull dusky slate, instead of the rich violet of the male, the hindhead is also whitish. The wavings on the back and lower parts more indistinct; wing nearly the same in both.

266. *ANAS CRECCA*, LINNÆUS AND WILSON.

GREEN-WINGED TEAL.

WILSON, PLATE LXX. FIG. IV. — EDINBURGH COLLEGE MUSEUM.

THE naturalists of Europe have designated this little duck by the name of the American teal, as being a species different from their own. On an examination, however, of the figure and description of the European teal by the ingenious and accurate Bewick, and comparing them with the present, no difference whatever appears in the length, extent, colour, or markings of either, but what commonly occurs among individuals of any other tribe; both undoubtedly belong to one and the same species.

This, like the summer duck, is a fresh water fowl, common in our markets in autumn and winter, but rarely seen here in summer. It frequents ponds, marshes, and the reedy shores of creeks and rivers; is very abundant among the rice plantations of the Southern States; flies in small parties, and feeds at night; associates often with the duck and mallard, feeding on the seeds of various kinds of grasses and water plants, and also on the tender leaves of vegetables. Its flesh is accounted excellent.

The green-winged teal is fifteen inches in length, and twenty-four inches in extent; bill, black; irides, pale brown; lower eyelid, whitish; head, glossy reddish chestnut; from the eye backwards to the nape, runs a broad band of rich silky green, edged above and below by a fine line of brownish white; the plumage of the nape ends in a kind of pendent crest; chin, blackish; below the chestnut, the neck, for three quarters of an inch, is white, beautifully crossed with circular undulating lines of black; back, scapulars, and sides of the breast, white, thickly crossed in the same manner; breast, elegantly marked with roundish or heart shaped spots of black, on a pale vinaceous ground, variegated with lighter tints; belly, white; sides waved with undulating lines; lower part of the vent-feathers, black; sides of

the same brownish white, or pale reddish cream; lesser wing-coverts, brown ash, greater tipt with reddish cream; the first five secondaries deep velvety black, the next five resplendent green, forming the speculum or beauty spot, which is bounded above by pale buff, below by white, and on each side by deep black; primaries, ashy brown; tail, pointed, eighteen feathers, dark drab; legs and feet, flesh coloured. In some a few circular touches of white appear on the breast near the shoulder of the wing. The windpipe has a small bony labyrinth where it separates into the lungs; the intestines measure three feet six inches, and are very small and tender.

The female wants the chestnut bay on the head, and the band of rich green through the eye, these parts being dusky white speckled with black; the breast is gray brown, thickly sprinkled with blackish, or dark brown; the back dark brown, waved with broad lines of brownish white; wing nearly the same as in the male.

This species is said to breed at Hudson's Bay, and to have from five to seven young at a time.* In France it remains throughout the year, and builds in April, among the rushes on the edges of ponds. It has been lately discovered to breed also in England, in the mosses about Carlisle.† It is not known to breed in any part of the United States. The teal is found in the north of Europe as far as Iceland, and also inhabits the Caspian Sea to the south. Extends likewise to China, having been recognized by Latham among some fine drawings of the birds of that country.

SUBGENUS III. — *FULIGULA*, BONAPARTE.

267. *ANAS MOLLISSIMA*, LINNÆUS AND WILSON. — EIDER DUCK.

WILSON, PLATE LXXI. FIG. II. — MALE.

EDINBURGH COLLEGE MUSEUM.

THE eider duck has been long celebrated in Europe for the abundance and excellence of its down, which,

* LATHAM.

† BEWICK.

for softness, warmth, lightness, and elasticity, surpasses that of all other ducks. The quantity found in one nest more than filled the crown of a hat, yet weighed no more than three quarters of an ounce; * and it is asserted that three pounds of this down may be compressed into a space scarce bigger than a man's fist, yet is afterwards so dilatable as to fill a quilt five feet square. †

The native regions of the eider duck extend from 45° north to the highest latitudes yet discovered, both in Europe and America. Solitary rocky shores and islands are their favourite haunts. Some wandering pairs have been known to breed on the rocky islands beyond Portland in the district of Maine, which is perhaps the most southern extent of their breeding place. In England the Fern Isles, on the coast of Northumberland, are annually visited by a few of these birds, being the only place in South Britain where they are known to breed. They occur again in some of the Western Isles of Scotland. Greenland and Iceland abound with them, and here, in particular places, their nests are crowded so close together that a person can scarcely walk without treading on them. The natives of those countries know the value of the down, and carry on a regular system of plunder both of it and also of the eggs. The nest is generally formed outwardly of drift grass, dry sea weed, and such like materials, the inside composed of a large quantity of down plucked from the breast of the female; in this soft elastic bed she deposits five eggs, extremely smooth and glossy, of a pale olive colour; they are also warmly covered with the same kind of down. When the whole number is laid, they are taken away by the natives, and also the down with which the nest is lined, together with that which covers the eggs. The female once more strips her breast of the remaining down, and lays a second time; even this, with the eggs, is generally taken away, and it is said that the male in this extremity furnishes the third quantity of down from his own breast; but if the cruel robbery be a third time repeated,

* PENNANT.
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† *Salern. Ornith.* p. 416.
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they abandon the place altogether. One female, during the whole time of laying, generally gives half a pound of down; and we are told, that in the year 1750, the Iceland Company sold as much of this article as amounted to three thousand seven hundred and forty-five banco dollars, besides what was directly sent to Glückstadt.* The down from dead birds is little esteemed, having lost its elasticity.

These birds associate together in flocks, generally in deep water, diving for shell fish, which constitute their principal food. They frequently retire to the rocky shores to rest, particularly on the appearance of an approaching storm. They are numerous on the coast of Labrador, and are occasionally seen in winter as far south as the capes of Delaware. Their flesh is esteemed by the inhabitants of Greenland, but tastes strongly of fish.

The length of this species is two feet three inches, extent three feet; weight between six and seven pounds; the head is large, and the bill of singular structure, being three inches in length, forked in a remarkable manner, running high up in the forehead, between which the plumage descends nearly to the nostril; the whole of the bill is of a dull yellowish horn colour, somewhat dusky in the middle; upper part of the head, deep velvet black, divided laterally on the hindhead by a whitish band; cheeks, white; sides of the head pale pea green, marked with a narrow line of white dropt from the ear feathers; the plumage of this part of the head to the throat, is tumid, and looks as if cut off at the end, for immediately below the neck it suddenly narrows, somewhat in the manner of the buffel-head, enlarging again greatly as it descends, and has a singular hollow between the shoulders behind; the upper part of the neck, the back, scapulars, lesser wing-coverts, and sides of the rump, are pure white; lower part of the breast, belly, and vent, black; tail, primaries, and secondaries, brownish black; the tertials curiously curved, falling

* *Letters on Iceland*, by UNO VAN TROIL, p. 146.

over the wing; legs, short, yellow; webs of the feet, dusky.

Latham has given us the following sketch of the gradual progress of the young males to their perfect colours: "In the first year the back is white, and the usual parts, except the crown, black; but the rest of the body is variegated with black and white. In the second year the neck and breast are spotted black and white, and the crown black. In the third the colours are nearly as when in full plumage, but less vivid, and a few spots of black still remaining on the neck; the crown, black, and bilid at the back part.

"The young of both sexes are the same, being covered with a kind of hairy down; throat and breast, whitish; and a cinereous line from the bill through the eyes to the hindhead." *

268. *ANAS MOLLISSIMA*, LINNÆUS AND WILSON.

FEMALE EIDER DUCK.

WILSON, PLATE LXXI. FIG. III. — EDINBURGH COLLEGE MUSEUM.

THE difference of colour in these two birds is singularly great. The female is considerably less than the male, and the bill does not rise so high in the forehead; the general colour is a dark reddish drab, mingled with lighter touches, and every where spotted with black; wings, dusky, edged with reddish; the greater coverts, and some of the secondaries, are tipped with white; tail, brownish black, lighter than in the male; the plumage in general is centred with bars of black, and broadly bordered with rufous drab; cheeks and space over the eye, light drab; belly, dusky, obscurely mottled with black; legs and feet, as in the male.

Van Troil, in his *Letters on Iceland*, observes respecting this duck, that "the young ones quit the nest soon after they are hatched, and follow the female, who leads them to the water, where, having taken them on her

* *Synopsis*, iii, p. 471.

The velvet duck measures twenty-three inches in length, and two feet nine inches in extent, and weighs about three pounds; the bill is broad, a little elevated at the base, where it is black, the rest red, except the lower mandible, which is of a pale yellowish white; both are edged with black, and deeply toothed; irides, pale cream; under the eye is a small spot of white; general colour of the plumage brownish black, the secondaries excepted, which are white, forming a broad band across the wing; there are a few reflections of purple on the upper plumage; the legs are red on the outside, and deep yellow, sprinkled with blackish, on the inner sides; tail, short and pointed.

The female is very little less than the male; but differs considerably in its markings. The bill is dusky, forehead and cheeks, white; under the eye, dull brownish; behind that a large oval spot of white; whole upper parts and neck, dark brownish drab; tips of the plumage, lighter; secondaries, white; wing-quills, deep brown; belly, brownish white; tail, hoary brown; the throat is white, marked with dusky specks; legs and feet, yellow.

Latham informs us, that this species is sometimes seen on the coast of England, but is not common there; that it inhabits Denmark and Russia, and, in some parts of Siberia, is very common. It is also found at Kamtschatka, where it is said to breed, going far inland to lay; the eggs are eight or ten, and white; the males depart, and leave the females to remain with the young until they are able to fly. In the river Ochotska they are so numerous that a party of natives, consisting of fifty or more, go off in boats, and drive these ducks up the river before them, and, when the tide ebbs, fall on them at once, and knock them on the head with clubs, killing such numbers that each man has twenty or thirty for his share.*

* *History of Kamtschatka*, p. 160.

271. *ANAS PERSPICILLATA*, LINNÆUS AND WILSON.

BLACK, OR SURF DUCK.

WILSON, PLATE LXVII. FIG. I.

THIS duck is peculiar to America, and altogether confined to the shores and bays of the sea, particularly where the waves roll over the sandy beach. Their food consists principally of those small bivalve shell fish already described, spout fish, and others that lie in the sand near its surface. For these they dive almost constantly, both in the sandy bays and amidst the tumbling surf. They seldom or never visit the salt marshes. They continue on our shores during the winter, and leave us early in May for their breeding places in the north. Their skins are remarkably strong, and their flesh coarse, tasting of fish. They are shy birds, not easily approached, and are common in winter along the whole coast from the river St Lawrence to Florida.

The length of this species is twenty inches, extent thirty-two inches; the bill is yellowish red, elevated at the base, and marked on the side of the upper mandible with a large square patch of black, preceded by another space of a pearl colour; the part of the bill thus marked swells or projects considerably from the common surface; the nostrils are large and pervious; the sides of the bill broadly serrated or toothed; both mandibles are furnished with a nail at the extremity; irides, white, or very pale cream; whole plumage, a shining black, marked on the crown and hindhead with two triangular spaces of pure white; the plumage on both these spots is shorter and thinner than the rest; legs and feet, blood red; membrane of the webbed feet, black; the primary quills are of a deep dusky brown.

On dissection the gullet was found to be gradually enlarged to the gizzard, which was altogether filled with broken shell fish. There was a singular hard expansion at the commencement of the windpipe, and another

much larger about three quarters of an inch above where it separates into the two lobes of the lungs ; this last was larger than a Spanish hazel nut, flat on one side and convex on the other. The protuberance on each side of the bill communicated with the nostril, and was hollow. All these were probably intended to contain supplies of air for the bird's support while under water ; the last may also protect the head from the sharp edges of the shells.

The female is altogether of a sooty brown, lightest about the neck ; the prominences on the bill are scarcely observable, and its colour dusky.

This species was also found by Captain Cook at Nootka Sound, on the northwest coast of America.

272. *ANAS RUBIDUS*, WILSON. — RUDDY DUCK.

WILSON, PLATE LXXI. FIG. V. — MALE.

THE specimen from which this very rare duck was described was shot some years ago, on the river Delaware, and appears to be an entire new species. The female, described in the next article, was killed in the same river ; and they are the only individuals of their kind I have met with. They are both preserved in the superb museum of my much respected friend, Mr Peale, of this city.

On comparing this duck with the description given by Latham of the Jamaica shoveller, I was at first inclined to believe I had found out the species ; but a more careful examination of both satisfied me that they cannot be the same, as the present differs considerably in colour ; and, besides, has some peculiarities which the eye of that acute ornithologist could not possibly have overlooked, in his examination of the species said to have been received by him from Jamaica. Wherever the general residence of this species may be, in this part of the world, at least, it is extremely rare, since among the many thousands of ducks brought to our markets during winter, I have never heard of a single individual of the present kind having been found among them.

The ruddy duck is fifteen inches and a half in length, and twenty-two inches in extent; the bill is broad at the tip, the under mandible much narrower, and both of a rich light blue; nostrils, small, placed in the middle of the bill; cheeks and chin, white; front, crown, and back part of the neck, down nearly to the back, black; rest of the neck, whole back, scapulars, flanks, and tail-coverts, deep reddish brown, the colour of bright mahogany; wings, plain pale drab, darkest at the points; tail, black, greatly tapering, containing eighteen narrow pointed feathers; the plumage of the breast and upper part of the neck is of a remarkable kind, being dusky olive at bottom, ending in hard bristly points of a silvery gray, very much resembling the hair of some kinds of seal skins; all these are thickly marked with transverse curving lines of deep brown; belly and vent, silver gray, thickly crossed with dusky olive; under tail-coverts, white; legs and feet, ash coloured.

273. *ANAS RURIDUS*, WILSON. — FEMALE RUDDY DUCK.

WILSON, PLATE LXXI. FIG. VI.

THIS is nearly of the same size as the male; the front, lores, and crown, deep blackish brown; bill, as in the male, very broad at the extremity, and largely toothed on the sides, of the same rich blue; cheeks, a dull cream; neck, plain dull drab, sprinkled about the auriculars with blackish; lower part of the neck and breast, variegated with gray, ash, and reddish brown; the reddish dies off towards the belly, leaving this last of a dull white, shaded with dusky ash; wings, as in the male; tail, brown; scapulars, dusky brown, thickly sprinkled with whitish, giving them a gray appearance; legs, ash.

A particular character of this species is its tapering sharp pointed tail, the feathers of which are very narrow; the body is short; the bill, very nearly as broad as some of those called shovellers; the lower mandible much narrower than the upper.

274. *ANAS LABRADORA*, GMELIN AND WILSON. — PIED DUCK.

WILSON, PLATE LXIX. FIG VI.

THIS is rather a scarce species on our coasts, and is never met with on fresh water lakes or rivers. It is called by some gunners the sand shoal duck, from its habit of frequenting sand bars. Its principal food appears to be shell fish, which it procures by diving. The flesh is dry, and partakes considerably of the nature of its food. It is only seen here during winter; most commonly early in the month of March, a few are observed in our market. Of their particular manners, place, or mode of breeding, nothing more is known. Latham observes, that a pair in the possession of Sir Joseph Banks were brought from Labrador. Having myself had frequent opportunities of examining both sexes of these birds, I find that, like most others, they are subject, when young, to a progressive change of colour. The full plumaged male is as follows: Length, twenty inches; extent, twenty-nine inches; the base of the bill, and edges of both mandibles for two-thirds of their length, are of a pale orange colour; the rest, black; towards the extremity it widens a little in the manner of the shovellers, the sides there having the singularity of being only a soft, loose, pendulous skin; irides, dark hazel; head, and half of the neck, white, marked along the crown to the hind head with a stripe of black; the plumage of the cheeks is of a peculiar bristly nature at the points, and round the neck passes a collar of black which spreads over the back, rump, and tail-coverts; below this colour the upper part of the breast is white, extending itself over the whole scapulars, wing-coverts, and secondaries; the primaries, lower part of the breast, whole belly, and vent, are black; tail, pointed, and of a blackish hoary colour; the fore part of the legs and ridges of the toes, pale whitish ash; hind part, the same, bespattered with blackish; webs, black; the edges of both mandibles are largely pectinated. In young birds, the whole of the white plumage is generally

strongly tinged with a yellowish cream colour; in old males, these parts are pure white, with the exception sometimes of the bristly pointed plumage of the cheeks, which retains its cream tint the longest, and, with the skinny part of the bill, form two strong peculiarities of this species.

The female measures nineteen inches in length, and twenty-seven in extent; bill, exactly as in the male; sides of the front, white; head, chin, and neck, ashy gray; upper parts of the back and wings, brownish slate; secondaries only, white; tertials, hoary; the white secondaries form a spot on the wing, bounded by the black primaries, and four hoary tertials edged with black; whole lower parts, a dull ash, skirted with brownish white, or clay colour; legs and feet, as in the male; the bill in both is marked from the nostrils backwards by a singular heart shaped outline.

The windpipe of the male measures ten inches in length, and has four enlargements, viz. one immediately below the mouth, and another at the interval of an inch; it then bends largely down to the breast bone, to which it adheres by two strong muscles, and has at that place a third expansion. It then becomes flattened, and before it separates into the lungs, has a fourth enlargement much greater than any of the former, which is bony, and round, puffing out from the left side. The intestines measured six feet; the stomach contained small clams, and some glutinous matter; the liver was remarkably large.

275. *ANAS FALISINTRIA*, WILSON. — CANVASS-BACK DUCK.

WILSON, PLATE LXX. FIG. V.

THIS celebrated American species, as far as can be judged from the best figures and descriptions of foreign birds, is altogether unknown in Europe. It approaches nearest to the pochard of England, (*anas ferina*,) but differs from that bird in being superior in size and weight, in the greater magnitude of its bill, and the

general whiteness of its plumage. A short comparison of the two will elucidate this point: The canvass-back measures two feet in length, by three feet in extent, and when in the best order weighs three pounds and upwards. The pochard, according to Latham and Bewick, measures nineteen inches in length, and thirty in extent, and weighs one pound twelve or thirteen ounces. The latter writer says of the pochard, "the plumage above and below is wholly covered with prettily freckled slender dusky threads, disposed transversely in close set, zigzag lines, on a pale ground, more or less shaded off with ash;" a description much more applicable to the bird figured beside it, the red head, and which very probably is the species meant. In the figure of the pochard given by Mr Bewick, who is generally correct, the bill agrees very well with that of our red head; but is scarcely half the size and thickness of that of the canvass-back; and the figure in the *Planches Enluminées* corresponds in that respect with Bewick's. In short, either these writers are egregiously erroneous in their figures and descriptions, or the present duck was altogether unknown to them. Considering the latter supposition the more probable of the two, I have designated this as a new species, and shall proceed to detail some particulars of its history.

The canvass-back duck arrives in the United States from the north about the middle of October, a few descend to the Hudson and Delaware, but the great body of these birds resort to the numerous rivers belonging to and in the neighbourhood of the Chesapeake Bay, particularly the Susquehannah, the Patapsco, Potowmac, and James' rivers, which appear to be their general winter rendezvous. Beyond this, to the south, I can find no certain accounts of them. At the Susquehannah, they are called canvass-backs; on the Potowmac, white-backs; and on James' river, sheldrakes. They are seldom found at a great distance up any of these rivers, or even in the salt water bay; but in that particular part of tide water where a certain grass-like plant grows, on the roots of which they feed. This plant,

which is said to be a species of *valisineria*, grows on fresh water shoals of from seven to nine feet (but never where these are occasionally dry,) in long narrow grass-like blades of four or five feet in length; the root is white, and has some resemblance to small celery. This grass is in many places so thick, that a boat can with difficulty be rowed through it, it so impedes the oars. The shores are lined with large quantities of it, torn up by the ducks, and drifted up by the winds, lying like hay in wind rows. Wherever this plant grows in abundance, the canvass-backs may be expected, either to pay occasional visits, or to make it their regular residence during the winter. It occurs in some parts of the Hudson; in the Delaware, near Gloucester, a few miles below Philadelphia; and in most of the rivers that fall into the Chesapeake, to each of which particular places these ducks resort; while in waters unprovided with this nutritive plant they are altogether unknown.

On the first arrival of these birds in the Susquehannah, near Havre-de-Grace, they are generally lean; but such is the abundance of their favourite food, that, towards the beginning of November, they are in pretty good order. They are excellent divers, and swim with great speed and agility. They sometimes assemble in such multitudes as to cover several acres of the river, and, when they rise suddenly, produce a noise resembling thunder. They float about these shoals, diving and tearing up the grass by the roots, which is the only part they eat. They are extremely shy, and can rarely be approached, unless by stratagem. When wounded in the wing, they dive to such prodigious distances, and with such rapidity, continuing it so perseveringly, and with such cunning and active vigour, as almost always to render the pursuit hopeless. From the great demand for these ducks, and the high price they uniformly bring in market, various modes are practised to get within gunshot of them. The most successful way is said to be, decoying them to the shore by means of a dog, while the gunner lies closely concealed in a proper situation. The dog, if properly trained, plays backwards and

forwards along the margin of the water, and the ducks, observing his manœuvres, enticed perhaps by curiosity, gradually approach the shore, until they are sometimes within twenty or thirty yards of the spot where the gunner lies concealed, and from which he rakes them, first on the water, and then as they rise. This method is called *tolling them in*. If the ducks seem difficult to decoy, any glaring object, such as a red handkerchief, is fixed round the dog's middle, or to his tail, and this rarely fails to attract them. Sometimes, by moonlight, the sportsman directs his skiff towards a flock whose position he had previously ascertained, keeping within the projecting shadow of some wood, bank, or headland, and paddles along so silently and imperceptibly, as often to approach within fifteen or twenty yards of a flock of many thousands, among whom he generally makes great slaughter.

Many other stratagems are practised, and, indeed, every plan that the ingenuity of the experienced sportsman can suggest, to approach within gunshot of these birds; but of all the modes pursued, none intimidate them so much as shooting them by night; and they soon abandon the place where they have been thus repeatedly shot at. During the day, they are dispersed about; but towards evening, collect in large flocks, and come into the mouths of creeks, where they often ride, as at anchor, with their head under their wing, asleep, there being always sentinels awake, ready to raise an alarm on the least appearance of danger. Even when feeding and diving in small parties, the whole never go down at one time, but some are still left above on the look out.

When the winter sets in severely, and the river is frozen, the canvass-backs retreat to its confluence with the bay, occasionally frequenting air holes in the ice, which are sometimes made for the purpose, immediately above their favourite grass, to entice them within gunshot of the hut or bush which is usually fixed at a proper distance, and where the gunner lies concealed, ready to take advantage of their distress. A Mr Hill,

who lives near James' river, at a place called Herring Creek, informs me, that, one severe winter, he and another person broke a hole in the ice about twenty by forty feet, immediately over a shoal of grass, and took their stand on the shore in a hut of brush, each having three guns well loaded with large shot. The ducks, which were flying up and down the river in great extremity, soon crowded to this place, so that the whole open space was not only covered with them, but vast numbers stood on the ice around it. They had three rounds, firing both at once, and picked up eighty-eight canvass-backs, and might have collected more had they been able to get to the extremity of the ice after the wounded ones. In the severe winter of 1779-80, the grass, on the roots of which these birds feed, was almost wholly destroyed in James' river. In the month of January, the wind continued to blow from W.N.W. for twenty-one days, which caused such low tides in the river, that the grass froze to the ice every where, and a thaw coming on suddenly, the whole was raised by the roots and carried off by the fresh. The next winter a few of these ducks were seen, but they soon went away again; and, for many years after, they continued to be scarce; and even to the present day, in the opinion of my informant, have never been so plenty as before.

The canvass-back, in the rich juicy tenderness of its flesh, and its delicacy of flavour, stands unrivalled by the whole of its tribe in this or perhaps any other quarter of the world. Those killed in the waters of the Chesapeake are generally esteemed superior to all others, doubtless from the great abundance of their favourite food which these rivers produce. At our public dinners, hotels, and particular entertainments, the canvass-backs are universal favourites. They not only grace but dignify the table, and their very name conveys to the imagination of the eager epicure the most comfortable and exhilarating ideas. Hence, on such occasions, it has not been uncommon to pay from one to three dollars a-pair for these ducks; and, indeed, at such times,

if they can, they must be had, whatever may be the price.

The canvass-back will feed readily on grain, especially wheat, and may be decoyed to particular places by baiting them with that grain for several successive days. Some few years since a vessel loaded with wheat was wrecked near the entrance of Great Egg Harbour, in the autumn, and went to pieces. The wheat floated out in vast quantities, and the whole surface of the bay was in a few days covered with ducks of a kind altogether unknown to the people of that quarter. The gunners of the neighbourhood collected in boats, in every direction, shooting them; and so successful were they, that, as Mr Beasley informs me, two hundred and forty were killed in one day, and sold among the neighbours, at twelve and a half cents a-piece, without the feathers. The wounded ones were generally abandoned, as being too difficult to be come up with. They continued about for three weeks, and during the greater part of that time a continual cannonading was heard from every quarter. The gunners called them sea ducks. They were all canvass-backs, at that time on their way from the north, when this floating feast attracted their attention, and for a while arrested them in their course. A pair of these very ducks I myself bought in Philadelphia market at the time, from an Egg Harbour gunner, and never met with their superior either in weight or excellence of flesh. When it was known among those people the loss they had sustained in selling for twenty-five cents what would have brought them from a dollar to a dollar and a half per pair, universal surprise and regret were naturally enough excited.

The canvass-back is two feet long, and three feet in extent, and, when in good order, weighs three pounds; the bill is large, rising high in the head, three inches in length, and one inch and three-eighths thick at the base, of a glossy black; eye, very small; irides, dark red; cheeks and fore part of the head, blackish brown; rest of the head and greater part of the neck, bright

glossy reddish chestnut, ending in a broad space of black that covers the upper part of the breast, and spreads round to the back; back, scapulars, and tertials, white, faintly marked with an infinite number of transverse waving lines or points, as if done with a pencil; whole lower parts of the breast, also the belly, white, slightly pencilled in the same manner, scarcely perceptible on the breast, pretty thick towards the vent; wing-coverts, gray, with numerous specks of blackish; primaries and secondaries, pale slate, two or three of the latter of which nearest the body are finely edged with deep velvety black, the former dusky at the tips; tail, very short, pointed, consisting of fourteen feathers of a hoary brown; vent and tail-coverts, black; lining of the wing, white; legs and feet, very pale ash, the latter three inches in width, a circumstance which partly accounts for its great powers of swimming.

The female is somewhat less than the male, and weighs three pounds and three quarters; the crown is blackish brown; cheeks and throat, of a pale drab; neck, dull brown; breast, as far as the black extends on the male, dull brown, skirted in places with pale drab; back, dusky white, crossed with fine waving lines; belly, of the same dull white, pencilled like the back; wings, feet, and bill, as in the male; tail-coverts, dusky; vent, white, waved with brown.

The windpipe of the male has a large flattish concave labyrinth, the ridge of which is covered with a thin transparent membrane; where the trachea enters this, it is very narrow, but immediately above swells to three times that diameter. The intestines are wide, and measure five feet in length.

276. *ANAS PERINA*. — LINNÆUS AND WILSON.

RED-HEADED DUCK.

WILSON, PLATE LXX. FIG. VI. — EDINBURGH COLLEGE MUSEUM.

THIS is a common associate of the canvass-back, frequenting the same places, and feeding on the stems

of the same grass, the latter eating only the roots; its flesh is very little inferior, and it is often sold in our markets for the canvass-back to those unacquainted with the characteristic marks of each. Anxious as I am to determine precisely whether this species be the red-headed wigeon, pochard, or dun bird* of England, I have not been able to ascertain the point to my own satisfaction, though I think it very probably the same, the size, extent, and general description of the pochard, agreeing pretty nearly with this.

The red-head is twenty inches in length, and two feet six inches in extent; bill, dark slate, sometimes black, two inches long, and seven eighths of an inch thick at the base, furnished with a large broad nail at the extremity; irides, flame coloured; plumage of the head long, velvety, and inflated, running high above the base of the bill; head, and about two inches of the neck, deep glossy reddish chestnut; rest of the neck and upper part of the breast, black, spreading round to the back; belly, white, becoming dusky towards the vent by closely marked undulating lines of black; back and scapulars, bluish white, rendered gray by numerous transverse waving lines of black; lesser wing-coverts, brownish ash; wing-quills, very pale slate, dusky at the tips; lower part of the back and sides under the wings, brownish black, crossed with regular zigzag lines of whitish; vent, rump, tail, and tail-coverts, black; legs and feet, dark ash.

The female has the upper part of the head dusky brown, rest of the head and part of the neck, a light sooty brown; upper part of the breast, ashy brown, broadly skirted with whitish; back, dark ash, with little or no appearance of white pencilling; wings, bill, and feet nearly alike in both sexes.

This duck is sometimes met with in the rivers of North and South Carolina, and also in those of Jersey and New York, but generally in fresh water, and usually

* Local names given to one and the same duck. It is also called the poker.

at no great distance from the sea. Is most numerous in the waters of the Chesapeake; and, with the connoisseurs in good eating, ranks next in excellence to the canvass-back. Its usual weight is about a pound and three quarters avoirdupois.

The red-head leaves the bay and its tributary streams in March, and is not seen until late in October.

The male of this species has a large flat bony labyrinth on the bottom of the windpipe, very much like that of the canvass-back, but smaller; over one of its concave sides is spread an exceeding thin transparent skin, or membrane. The intestines are of great width, and measure six feet in length.

277. *ANAS MARILA*, LINNÆUS AND WILSON. — SCAUP DUCK.

WILSON, PLATE LXIX. FIG. III. — EDINBURGH COLLEGE MUSEUM.

This duck is better known among us by the name of the blue bill. It is an excellent diver, and, according to Willoughby, feeds on a certain small kind of shell fish called scaup, whence it has derived its name. It is common both to our fresh water rivers and sea shores in winter. Those that frequent the latter are generally much the fattest, on account of the greater abundance of food along the coast. It is sometimes abundant in the Delaware, particularly in those places where small snails, its favourite shell fish, abound; feeding also, like most of its tribe, by moonlight. They generally leave us in April, though I have met with individuals of this species so late as the middle of May, among the salt marshes of New Jersey. Their flesh is not of the most delicate kind, yet some persons esteem it. That of the young birds is generally the tenderest and most palatable.

The length of the blue bill is nineteen inches, extent twenty-nine inches; bill, broad, generally of a light blue, sometimes of a dusky lead colour; under, reddish; head, tumid, covered with plumage of a dark glossy green, extending half way down the neck; rest of the

neck and breast, black, spreading round to the back; back and scapulars, white, thickly crossed with waving lines of black; lesser coverts, dusky, powdered with veins of whitish; primaries and tertials, brownish black; secondaries, white, tipped with black, forming the speculum; rump and tail-coverts, black; tail, short, rounded, and of a dusky brown; belly, white, crossed near the vent with waving lines of ash; vent, black; legs and feet, dark slate.

Such is the colour of the bird in its perfect state. Young birds vary considerably, some having the head black mixed with gray and purple, others the back dusky, with little or no white, and that irregularly dispersed.

The female has the front and sides of the same white; head and half of the neck, blackish brown; breast, spreading round to the back, a dark sooty brown, broadly skirted with whitish; back, black, thinly sprinkled with grains of white; vent, whitish; wings the same as in the male.

The windpipe of the male of this species is of large diameter; the labyrinth similar to some others, though not of the largest kind; it has something of the shape of a single cockle shell; its open side, or circular rim, covered with a thin transparent skin. Just before the windpipe enters this, it lessens its diameter at least two-thirds, and assumes a flattish form.

The scaup duck is well known in England. It inhabits Iceland and the more northern parts of the continent of Europe, Lapland, Sweden, Norway, and Russia. It is also common on the northern shores of Siberia. Is very frequent on the river Ob. Breeds in the north, and migrates southward in winter. It inhabits America as high as Hudson's Bay, and retires from this last place in October.*

* LATHAM.

278. *ANAS RUFITORQUES*, BONAPARTE.*ANAS FULIGULA*, WILSON. — TUFTED DUCK.

WILSON, PLATE LXVII. FIG. V. — EDINBURGH COLLEGE MUSEUM.

THIS is an inhabitant of both continents; it frequents fresh water rivers, and seldom visits the sea shore. It is a plump, short bodied duck; its flesh generally tender and well tasted. They are much rarer than most of our other species, and are seldom seen in market. They are most common about the beginning of winter, and early in the spring. Being birds of passage, they leave us entirely during the summer.

The tufted duck is seventeen inches long, and two feet two inches in extent; the bill is broad and of a dusky colour, sometimes marked round the nostrils and sides with light blue; head, crested, or tufted, as its name expresses, and of a black colour, with reflections of purple; neck marked near its middle by a band of deep chestnut; lower part of the neck, black, which spreads quite round to the back; back and scapulars, black, minutely powdered with particles of white, not to be observed but on a near inspection; rump and vent, also black; wings, ashy brown; secondaries, pale ash, or bluish white; tertials, black, reflecting green; lower part of the breast and whole belly, white; flanks crossed with fine zigzag lines of dusky; tail, short, rounded, and of a dull brownish black; legs and feet, greenish ash; webs, black; irides, rich orange; stomach filled with gravel and some vegetable food.

In young birds the head and upper part of the neck are purplish brown; in some the chestnut ring on the fore part of the middle of the neck is obscure, in others very rich and glossy, and, in one or two specimens which I have seen, it is altogether wanting. The back is in some instances destitute of the fine powdered particles of white, while in others these markings are large and thickly interspersed.

The specimen from which the description was taken,

was shot on the Delaware on the 10th of March, and presented to me by Dr S. B. Smith of this city. On dissection, it proved to be a male, and was exceeding fat and tender. Almost every specimen I have since met with has been in nearly the same state ; so that I cannot avoid thinking this species equal to most others for the table, and greatly superior to many.

279. *ANAS CLANGULA*, LINNÆUS AND WILSON. — GOLDEN-FYF.

WILSON, PLATE LXVII. FIG. VI. — EDINBURGH COLLEGE MUSEUM.

THIS duck is well known in Europe, and in various regions of the United States, both along the sea coast and about the lakes and rivers of the interior. It associates in small parties, and may easily be known by the vigorous whistling of its wings as it passes through the air. It swims and dives well, but seldom walks on shore, and then in a waddling, awkward manner. Feeding chiefly on shell fish, small fry, &c. their flesh is less esteemed than that of the preceding. In the United States they are only winter visitors, leaving us again in the month of April, being then on their passage to the north to breed. They are said to build, like the wood duck, in hollow trees.

The golden-eye is nineteen inches long, and twenty-nine in extent, and weighs on an average about two pounds ; the bill is black, short, rising considerably up in the forehead ; the plumage of the head and part of the neck is somewhat tumid, and of a dark green, with violet reflections, marked near the corner of the mouth with an oval spot of white ; the irides are golden yellow ; rest of the neck, breast, and whole lower parts, white, except the flanks, which are dusky ; back and wings, black ; over the latter a broad bed of white extends from the middle of the lesser coverts to the extremity of the secondaries ; the exterior scapulars are also white ; tail, hoary brown ; rump and tail-coverts, black ; legs and toes, reddish orange ; webs very large, and of a dark purplish brown ; hind toe and exterior edge of the inner

one, broadly finned; sides of the bill, obliquely dentated; tongue, covered above with a fine thick velvety down of a whitish colour.

The full plumaged female is seventeen inches in length, and twenty-seven inches in extent; bill, brown, orange near the tip; head and part of the neck, brown, or very dark drab, bounded below by a ring of white; below that the neck is ash, tipped with white; rest of the lower parts, white; wings, dusky, six of the secondaries and their greater coverts, pure white, except the tips of the last, which are touched with dusky spots; rest of the wing-coverts, cinereous, mixed with whitish; back and scapulars, dusky, tipped with brown; feet, dull orange; across the vent, a band of cinereous; tongue, covered with the same velvety down as the male.

The young birds of the first season very much resemble the females, but may generally be distinguished by the white spot, or at least its rudiments, which marks the corner of the mouth. Yet, in some cases, even this is variable, both old and young male birds occasionally wanting the spot.

From an examination of many individuals of this species of both sexes, I have very little doubt that the morillon of English writers (*anas glaucron*) is nothing more than the young male of the golden-eye.

The conformation of the trachea, or windpipe, of the male of this species, is singular: Nearly about its middle it swells out to at least five times its common diameter, the concentric hoops or rings, of which this part is formed, falling obliquely into one another when the windpipe is relaxed; but when stretched, this part swells out to its full size, the rings being then drawn apart; this expansion extends for about three inches; three more below this, it again forms itself into a hard cartilaginous shell of an irregular figure, and nearly as large as a walnut; from the bottom of this labyrinth, as it has been called, the trachea branches off to the two lobes of the lungs; that branch which goes to the left lobe being three times the diameter of the right.

The female has nothing of all this. The intestines measure five feet in length, and are large and thick.

I have examined many individuals of this species, of both sexes and in various stages of colour, and can therefore affirm, with certainty, that the foregoing descriptions are correct. Europeans have differed greatly in their accounts of this, from finding males in the same garb as the females, and other full plumaged males destitute of the spot of white on the cheek; but all these individuals bear such evident marks of belonging to one peculiar species, that no judicious naturalist, with all these varieties before him, can long hesitate to pronounce them the same.

280. *ANAS ALBEOLA*, LINNÆUS AND WILSON.

BUFFLE-HEADED DUCK.

WILSON, PLATE LXVII. FIG. II. MALE. — FIG. III. FEMALE.

THIS pretty little species, usually known by the name of the butter-box, or butter-ball, is common to the sea shores, rivers, and lakes of the United States, in every quarter of the country, during autumn and winter. About the middle of April, or early in May, they retire to the north to breed. They are dexterous divers, and fly with extraordinary velocity. So early as the latter part of February the males are observed to have violent disputes for the females; at this time they are more commonly seen in flocks, but, during the preceding part of winter, they usually fly in pairs. Their note is a short *quak*. They feed much on shell fish, shrimps, &c. They are sometimes exceedingly fat, though their flesh is inferior to many others for the table. The male exceeds the female in size, and greatly in beauty of plumage.

The buffle-headed duck, or rather, as it has originally been, the buffalo-headed duck, from the disproportionate size of its head, is fourteen inches long, and twenty-three inches in extent; the bill is short, and of a light

blue or leaden colour; the plumage of the head and half of the neck is thick, long, and velvety, projecting greatly over the lower part of the neck; this plumage on the forehead and nape is rich glossy green, changing into a shining purple on the crown and sides of the neck; from the eyes backward passes a broad band of pure white; iris of the eye, dark; back, wings, and part of the scapulars, black; rest of the scapulars, lateral band along the wing, and whole breast, snowy white; belly, vent, and tail-coverts, dusky white; tail, pointed, and of a hoary colour.

The female is considerably less than the male, and entirely destitute of the tumid plumage of the head; the head, neck, and upper parts of the body, and wings, are sooty black, darkest on the crown; side of the head marked with a small oblong spot of white; bill, dusky; lower part of the neck, ash, tipped with white; belly, dull white; vent, cinereous; outer edges of six of the secondaries and their incumbent coverts, white, except the tips of the latter, which are black; legs and feet a livid blue; tail, hoary brown; length of the intestines three feet six inches; stomach filled with small shell fish. This is the spirit duck of Pennant, so called from its dexterity in diving, (*Arctic Zoology*, No. 487.) likewise the little brown duck of Catesby (*Natural History of Carolina*, pl. 98.)

This species is said to come into Hudson's Bay, about Severn River, in June, and make their nests in trees in the woods near ponds.* The young males, during the first year, are almost exactly like the females in colour.

281. *ANAS GLACIALIS*, LINNÆUS AND WILSON.

LONG-TAILED DUCK.

WILSON, PL. IXX. FIG. 1. MALT.—EDINBURGH COLLEGE MUSEUM.

THIS duck is very generally known along the shores of the Chesapeake Bay, by the name of south-southerly,

* LATHAM.

from the singularity of its cry, something imitative of the sound of those words, and also, that, when very clamorous, they are supposed to betoken a southerly wind; on the coast of New Jersey, they are usually called old wives. They are chiefly salt water ducks, and seldom ramble far from the sea. They inhabit our bays and coasts during the winter only; are rarely found in the marshes, but keep in the channel, diving for small shell-fish, which are their principal food. In passing to and from the bays, sometimes in vast flocks, particularly towards evening, their loud and confused noise may be heard in calm weather at the distance of several miles. They fly very swiftly, take short excursions, and are lively restless birds. Their native regions are in the north, where great numbers of them remain during the whole year; part only of the vast family migrating south to avoid the severest rigours of that climate. They are common to the whole northern hemisphere. In the Orkneys, they are met with in considerable flocks, from October to April; frequent in Sweden, Lapland, and Russia; are often found about St Petersburg, and also in Kamtschatka. Are said to breed at Hudson's Bay, making their nest among the grass near the sea, like the eider duck, and about the middle of June, lay from ten to fourteen bluish white eggs, the size of those of a pullet. When the young are hatched, the mother carries them to the water in her bill. The nest is lined with the down of her breast, which is accounted equally valuable with that of the eider duck, were it to be had in the same quantity.* They are hardy birds, and excellent divers. Are not very common in England, coming there only in very severe winters; and then but in small straggling parties; yet are found on the coast of America as far south at least, as Charleston, in Carolina, during the winter. Their flesh is held in no great estimation, having a fishy taste. The down and plumage, particularly on the breast and lower parts of the body, are very abundant, and appear to be of the best quality.

* LATHAM.

The length of this species is twenty-two inches; extent, thirty inches; bill, black, crossed near the extremity by a band of orange; tongue, downy; iris, dark red; cheeks and frontlet, dull dusky drab, passing over the eye, and joining a large patch of black on the side of the neck, which ends in dark brown; throat and rest of the neck, white; crown, tufted, and of a pale cream colour; lower part of the neck, breast, back, and wings, black; scapulars and tertials, pale bluish white, long, and pointed, and falling gracefully over the wings; the white of the lower part of the neck spreads over the back an inch or two; the white of the belly spreads over the sides, and nearly meets at the rump; secondaries, chestnut, forming a bar across the wing; primaries, rump, and tail-coverts, black; the tail consists of fourteen feathers, all remarkably pointed, the two middle ones nearly four inches longer than the others; these, with the two adjoining ones, are black; the rest, white; legs and feet, dusky slate.

On dissection, the intestines were found to measure five feet six inches. The windpipe was very curiously formed; besides the labyrinth, which is nearly as large as the end of the thumb, it has an expansion immediately above that, of double its usual diameter, which continues for an inch and a half; this is flattened on the side next the breast, with an oblong window-like vacancy in it, crossed with five narrow bars, and covered with a thin transparent skin, like the panes of a window; another thin skin of the same kind is spread over the external side of the labyrinth, which is partly of a circular form. This singular conformation is, as usual, peculiar to the male, the female having the windpipe of nearly an uniform thickness throughout. She differs also so much in the colours and markings of her plumage as to render a separate description of her necessary; for which see the following article.

282. *ANAS GLACIALIS*, LINNÆUS AND WILSON.

FEMALE LONG-TAILED DUCK.

WILSON, PLATE LXX. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THE female is distinguished from the male by wanting the lengthened tertials, and the two long pointed feathers of the tail, and also by her size, and the rest of her plumage, which is as follows: length, sixteen inches; extent, twenty-eight inches; bill, dusky; middle of the crown, and spot on the side of the neck, blackish; a narrow dusky line runs along the throat for two inches; rest of the head, and upper half of the neck, white, lower half, pale vinaceous bay, blended with white; all the rest of the lower parts of the body, pure white; back, scapulars, and lesser wing-coverts, bright ferruginous, centred with black, and interspersed with whitish; shoulders of the wing, and quills, black; lower part of the back, the same, tinged with brown; tail, pale brown ash, inner vanes of all but the two middle feathers, white; legs and feet, dusky slate. The legs are placed far behind, which circumstance points out the species to be great divers. In some females, the upper parts are less ferruginous.

Some writers suppose the singular voice, or call, of this species, to be occasioned by the remarkable construction of its windpipe; but the fact, that the females are uniformly the most noisy, and yet are entirely destitute of the singularities of this conformation, overthrows the probability of this supposition.

283. *ANAS HISTRIONICA*, LINNÆUS AND WILSON.

HARLEQUIN DUCK.

WILSON, PLATE LXII. FIG. IV. — EDINBURGH COLLEGE MUSEUM.

THIS species is very rare on the coasts of the Middle and Southern States, though not unfrequently found off those of New England, where it is known by the dignified title of the lord, probably from the elegant

crests and circles of white which ornament its neck and breast. Though an inhabitant of both continents, little else is known of its particular manners than that it swims and dives well; flies swift, and to a great height; and has a whistling note. Is said to frequent the small rivulets inland from Hudson's Bay, where it breeds. The female lays ten white eggs on the grass; the young are prettily speckled. It is found on the eastern continent as far south as Lake Baikal, and thence to Kamtschatka, particularly up the river Ochotska; and was also met with at Aoonalashka and Iceland.* At Hudson's Bay, it is called the painted duck; at Newfoundland, and along the coast of New England, the loid; it is an active vigorous diver, and often seen in deep water, considerably out at sea.

The harlequin duck, so called from the singularity of its markings, is seventeen inches in length, and twenty-eight inches in extent; the bill is of moderate length, of a lead colour, tipped with red; irides, dark; upper part of the head, black; between the eye and bill, a broad space of white, extending over the eye, and ending in reddish; behind the ear, a similar spot; neck, black; ending below in a circle of white; breast, deep slate; shoulders or sides of the breast, marked with a semicircle of white; belly, black; sides, chestnut; body above, black, or deep slate, some of the scapulars, white; greater wing-coverts, tipped with the same; legs and feet, deep ash; vent and pointed tail, black.

The female is described as being less, "the forehead, and between the bill and eye, white, with a spot of the same behind the ear; head, neck, and back, brown, palest on the fore part of the neck; upper part of the breast, and rump, red brown; lower breast and belly, barred pale rufous and white; behind the thighs, rufous and brown; scapulars and wing-coverts, rufous brown; outer greater ones, blackish; quills and tail, dusky, the last inclining to rufous; legs, dusky."*

The few specimens of this duck which I have met

* LATHAM.

the whole of my examinations and dissections of the present species, I have never yet found the female in his dress. What I consider as undoubtedly the true female of this species is described at page 243. They were both shot in the month of April, in the same creek, unaccompanied by any other; and, on examination, the sexual parts of each were strongly and prominently marked. The windpipe of the female had nothing remarkable in it; that of the male had two very large expansions, which have been briefly described by Willoughby, who says: "It hath a large bony labyrinth on the windpipe, just above the divarications; and the windpipe hath, besides, two swellings out, one above another, each resembling a powder puff." These labyrinths are the distinguishing characters of the males; and are always found, even in young males who have not yet thrown off the plumage of the female, as well as in the old ones. If we admit these dun divers to be a distinct species, we can find no difference between their pretended females and those of the goosander, only one kind of female of this sort being known; and this is contrary to the usual analogy of the other three species, viz. the red-breasted merganser, the hooded, and the smew, all of whose females are well known, and bear the same comparative resemblance in colour to their respective males, the length of crest excepted, as the female goosander we are about to describe bears to him.

Having thought thus much necessary on this disputed point, I leave each to form his own opinion on the facts and reasoning produced.

[*The goosander is a broad, long-bodied, and flat-backed bird. It is a great diver, and remains under water for a considerable time. It is very shy, and hard to be obtained, unless there is ice in the river, at which time it may be approached by stratagem, the shooter and his boat being clothed in white, so as to resemble

* From this to the end of the article, marked off with brackets, is an addition to Wilson's description by Mr Ord. The articles, Gray Phalarope (p. 132,) and Laughing Gull (p. 161,) are also Mr Ord's.

floating ice. It appears to live chiefly upon fish, which its sharp toothed and hooked bill is admirably calculated for securing. It rises from the water with considerable fluttering, its wings being small and short; but, when in the air, it flies with great swiftness. It is a singular circumstance, that those goosanders which are seen in the Delaware and Schuylkill, in the vicinity of Philadelphia, are principally old males.

The male goosander is twenty-six inches in length, and thirty-seven inches in breadth; the bill, to the angles of the mouth, is three inches long, nearly an inch thick at the base, strongly toothed on both mandibles, the upper mandible with two corresponding rows of fine teeth within, the lower divided to the nail, and connected by a thin elastic membrane, which admits of considerable expansion, to facilitate the passage of fish; nostrils, subovate, broader on the hind part; the bill is black above and below, its sides crimson; the tongue is long, pointed, furnished with a double row of papillæ running along the middle, and has a hairy border; irides, golden; the frontlet, lores, area of the eyes, and throat, jet black; head, crested, tumid, and of a beautiful glossy bottle green colour, extending nearly half way down the neck, the remainder of which, with the exterior part of the scapulars, the lesser coverts, the greater part of the secondaries, the tertials and lining of the wings, white, delicately tinged with cream colour; the breast and whole lower parts are of a rich cream colour; the upper part of the back, and the interior scapulars, a fine glossy black; the primaries and exterior part of the secondaries, with their coverts, are brownish black; the lower part of nearly all the coverts of the secondaries, white, the upper part, black, forming a bar across the wing; the shoulder of the wing is brownish ash, the feathers tipped with black; the middle and lower parts of the back and tail-coverts, ash, the plumage centred with brown; tail, brownish ash, rounded, composed of eighteen feathers, and extends about three inches beyond the wings; the flanks are marked with waving, finely dotted lines of ash on a white ground; tertials on

the outer vanes, edged with black; the legs and feet are of a rich orange; toes, long, middle one somewhat the longest; claws, flesh coloured. The whole plumage is of a silky softness, particularly that of the head and neck, which feels like the most delicate velvet.

Naturalists represent the feet and legs of this species as of the colour of red sealing wax. This is an error which arose from the circumstance of their having seen their specimens some time after they had been killed. When the bird is alive, these parts are of a beautiful orange, which changes after death to the colour they mention.

The above description was taken from a fine full plumaged male, which was shot in the vicinity of Philadelphia in the month of January. It was in good condition, and weighed three pounds thirteen ounces avoirdupois.]

285. *MERGUS MERGANSER*, LINNÆUS AND WILSON.

FEMALE GOOSANDER.

WILSON, PLATE LXVIII. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THIS generally measures an inch or two shorter than the male; the length of the present specimen was twenty-five inches; extent, thirty-five inches; bill, crimson on the sides, black above; irides, reddish; crested head and part of the neck, dark brown, lightest on the sides of the neck, where it inclines to a sorrel colour; chin and throat, white; the crest shoots out in long radiating flexible stripes; upper part of the body, tail, and flanks, an ashy slate, tinged with brown; primaries, black; middle secondaries, white, forming a large speculum on the wing; greater coverts, black, tipped for half an inch with white; sides of the breast, from the sorrel-coloured part of the neck downwards, very pale ash, with broad semicircular touches of white; belly and lower part of the breast, a fine yellowish cream colour—a distinguishing trait also in the male; legs and feet, orange red.

[It is truly astonishing with what pertinacity Montagu adheres to the opinion that the dun diver is a species distinct from the goosander. Had this excellent ornithologist had the same opportunities for examining these birds that we have, he would never have published an opinion, which, in this quarter of the globe, would subject one, even from the vulgar, to the imputation of ignorance.]*

286. *MERGUS UCCELLATUS*, LINNÆUS AND WILSON.

HOODED MERGANSER.

WILSON, PLATE LXIX. FIG. I.

THIS species, on the sea coast, is usually called the hairy head. They are more common, however, along our lakes and fresh water rivers than near the sea; tracing up creeks, and visiting mill ponds, diving perpetually for their food. In the creeks and rivers of the Southern States, they are very frequently seen during the winter. Like the red-breasted, they are migratory, the manners, food, and places of resort of both being very much alike.

The hooded merganser is eighteen inches in length, and two feet in extent; bill, blackish red, narrow, thickly toothed, and furnished with a projecting nail at the extremity; the head is ornamented with a large circular crest, which the bird has the faculty of raising or depressing at pleasure; the fore part of this, as far as the eye, is black, thence to the hindhead, white, and elegantly tipped with black; it is composed of two separate rows of feathers, radiating from each side of the head, and which may be easily divided by the hand; irides, golden; eye, very small; neck, black, which spreads to and over the back; part of the lesser wing-coverts, very pale ash, under which the greater coverts and secondaries form four alternate bars of black and white;

* The concluding paragraph, marked off with brackets, is an addition by Mr Ord.

tertials, long, black, and streaked down the middle with white; the black on the back curves handsomely round in two points on the breast, which, with the whole lower parts, are pure white; sides, under the wings and flanks, reddish brown, beautifully crossed with parallel lines of black; tail, pointed, consisting of twenty feathers of a sooty brown; legs and feet, flesh coloured; claws, large and stout. The windpipe has a small labyrinth.

The female is rather less, the crest smaller, and of a light rust or dull ferruginous colour, entirely destitute of the white; the upper half of the neck, a dull drab, with semicircles of lighter, the white on the wings is the same as in the male, but the tertials are shorter and have less white; the back is blackish brown; the rest of the plumage corresponds very nearly with the male.

This species is peculiar to America; is said to arrive at Hudson's Bay about the end of May; builds close to the lakes; the nest is composed of grass, lined with feathers from the breast; is said to lay six white eggs. The young are yellow, and fit to fly in July.*

287. *MERGUS SERRATOR*, LINNAEUS AND WILSON

RED-BREASTED MERGANSER.

WILSON, PLATE LXIX. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THIS is much more common in our fresh waters than the preceding, and is frequently brought to the Philadelphia market from the shores of the Delaware. It is an inhabitant of both continents. In the United States, it is generally migratory; though a few are occasionally seen in autumn, but none of their nests have as yet come under my notice. They also frequent the sea shore, keeping within the bays and estuaries of rivers. They swim low in the water, and, when wounded in the wing, very dexterously contrive to

* HUTCHINS, as quoted by Latham.

elude the sportsman or his dog, by diving and coming up at a great distance, raising the bill only above water, and dipping down again with the greatest silence. The young males of a year old are often found in the plumage of the female; their food consists of small fry, and various kinds of shell-fish.

The red-breasted merganser is said, by Pennant, to breed on Loch Mari in the county of Ross, in North Britain, and also in the Isle of Ilay. Latham informs us, that it inhabits most parts of the north of Europe on the continent, and as high as Iceland; also in the Russian dominions about the great rivers of Siberia, and the Lake Baikal. Is said to be frequent in Greenland, where it breeds on the shores. The inhabitants often take it by darts thrown at it, especially in August, being then in moult. At Hudson's Bay, according to Hutchins, they come in pairs about the beginning of June, as soon as the ice breaks up, and build soon after their arrival, chiefly on dry spots of ground in the islands; lay from eight to thirteen white eggs, the size of those of a duck; the nest is made of withered grass, and lined with the down of the breast. The young are of a dirty brown, like young goslings. In October they all depart southward to the lakes, where they may have open water.

This species is twenty-two inches in length, and thirty-two in extent; the bill is two inches and three quarters in length, of the colour of bright sealing wax, ridged above with dusky; the nail at the tip, large, blackish, and overhanging; both mandibles are thickly serrated; irides, red; head, furnished with a long hairy crest, which is often pendent, but occasionally erected; this, and part of the neck, is black, glossed with green; the neck under this for two or three inches, is pure white, ending in a broad space of reddish ochre spotted with black, which spreads over the lower part of the neck and sides of the breast; shoulders, back, and tertials, deep velvety black, the first marked with a number of singular roundish spots of white; scapulars, white; wing-coverts, mostly white, crossed by two

narrow bands of black; primaries, black; secondaries, white; several of the latter edged with black; lower part of the back, the rump, and tail-coverts, gray, speckled with black; sides under the wings, elegantly crossed with numerous waving lines of black; belly and vent, white; legs and feet, red; the tail, dusky ash; the black of the back passes up the hind neck in a narrow band to the head.

The female is twenty-one inches in length, and thirty in extent; the crested head and part of the neck are of a dull sorrel colour; irides, yellow; legs and bill red, upper parts, dusky slate; wings, black; greater coverts, largely tipped with white; secondaries, nearly all white; sides of the breast, slightly dusky; whole lower parts, pure white; the tail is of a lighter slate than the back. The crest is much shorter than in the male, and sometimes there is a slight tinge of ferruginous on the breast.

The windpipe of the male of this species is very curious, and differs something from that of the goosander. About two inches from the mouth, it swells out to four times its common diameter, continuing of that size for about an inch and a half. This swelling is capable of being shortened or extended; it then continues of its first diameter for two inches or more, when it becomes flattish, and almost transparent for other two inches; it then swells into a bony labyrinth of more than two inches in length by one and a half in width, over the hollow sides of which is spread a yellowish skin like parchment. The left side of this, fronting the back of the bird, is a hard bone. The divarications come out very regularly from this at the lower end, and enter the lungs.

The intention of Nature in this extraordinary structure is probably to enable the bird to take down a supply of air to support respiration while diving; yet why should the female, who takes the same submarine excursions as the male, be entirely destitute of this apparatus?

288. *MERGUS ALBIFLUS*, LINNÆUS AND WILSON.

THE SMEW, OR WHITE NUN.

WILSON, PLATE LXXI. FIG. IV. — EDINBURGH COLLEGE MUSEUM.

THIS is another of those mergansers commonly known in this country by the appellation of fishermen, fisher ducks, or divers. The present species is much more common on the coast of New England than farther to the south. On the shores of New Jersey it is very seldom met with. It is an admirable diver, and can continue for a long time under water. Its food is small fry, shell-fish, shrimps, &c. In England, as with us, the smew is seen only during winter; it is also found in France, in some parts of which it is called *la Piette*, as in parts of England it is named the magpie diver. Its breeding place is doubtless in the Arctic regions, as it frequents Iceland; and has been observed to migrate with other mergansers and several kinds of ducks up the river Wolga in February.*

The smew, or white nun, is nineteen inches in length, and two feet three inches in extent; bill, black, formed very much like that of the red-breasted merganser, but not so strongly toothed; irides, dark; head, crested; crown, white; hindhead, black; round the area of the eye, a large oval space of black; whole neck, breast, and belly, white, marked on the upper and lower part of the breast with a curving hue of black; back, black; scapulars, white, crossed with several faint dusky bars; shoulder of the wing and primaries, black; secondaries and greater coverts, black, broadly tipped with white; across the lesser coverts, a large band of white; sides and flanks, crossed with waving lines; tail, dark ash; legs and feet, pale bluish slate.

The female is considerably less than the male; the bill, a dark lead colour; crest of the same peculiar

* *Dic. Russ.* ii, p. 145.

form as that of the male, but less, and of a reddish brown; marked round the area of the eyes with dusky; cheeks, fore part of the neck, and belly, white; round the middle of the neck, a collar of pale brown; breast and shoulders, dull brown and whitish intermixed: wings and back, marked like those of the male, but of a deep brownish ash in those parts which in him are black; legs and feet, pale blue. The young birds, as in the other three species, strongly resemble the female during the first and part of the second year. As these changes of colour, from the garb of the female to that of the male, take place in the remote regions of the north, we have not the opportunity of detecting them in their gradual progress to full plumage. Hence, as both males and females have been found in the same dress, some writers have considered them as a separate species from the smew, and have given to them the title of the red-headed smew.

In the pouds of New England, and some of the lakes in the State of New York, where the smew is frequently observed, these red-headed kind are often found in company, and more numerous than the other, for very obvious reasons, and bear, in the markings, though not in the colours, of their plumage, evident proof of their being the same species, but younger birds or females. The male, like the Muscovy drake, and many others, when arrived at his full size, is nearly one-third heavier than the female, and this disproportion of weight, and difference of colour, in the full-grown males and females, are characteristic of the whole genus.

GENUS LXVII — *PLOTUS*, LINNÆUS289. *PLOTUS ANHINGA*, LINNÆUS.*PLOTUS MELANOGASTER*, WILSON.

DARTER, OR SNAKE BIRD.*

WILS. PL. LXXIV. FIG. 1. MALE.—EDINBURGH COLLEGE MUSEUM.

HEAD, neck, whole body, above and below, of a deep shining black, with a green gloss, the plumage extremely soft and agreeable to the touch; the commencement of the back is ornamented with small, oblong, ashy white spots, which pass down the shoulders, increasing in size according to the size of the feathers, and running down the scapulars; wings and tail of a shining black, the latter broadly tipped with dirty white; the lesser coverts are glossed with green, and are spotted with ashy white; the last row of the lesser coverts, and the coverts of the secondaries, are chiefly ashy white, which forms a large bar across the wing; the outer web of the large scapulars is crimped; tail, rounded, the two under feathers the shortest, the two upper feathers, for the greater part of their length, beautifully crimped on their outer webs, the two next feathers in a slight degree so; bill, dusky at the base and above; the upper mandible brownish yellow at the sides, the lower mandible yellow ochre; inside of the mouth dusky; irides, dark crimson; the orbit of the eye, next to the plumage of the head, is of a greenish blue colour, this passes round, in the form of a zigzag band, across the front,—the next colour is black, which entirely surrounds the eye; eyelids, of a bright azure, running into violet next the eyeball; lores, greenish blue; naked skin in front black; jugular pouch, jet black; hindhead subcrested; along the sides of the neck there runs a line of loose unwebbed feathers of a dingy ash colour, resembling the plumage of callow

* Named in the plate, Black-bellied Darter. The article is the composition of Mr Ord.

young ; here and there, on the upper part of the neck, one perceives a feather of the same ; on the forehead there is a small knob or protuberance ; the neck, near its centre, takes a singular bend, in order to enable the bird to dart forward its bill with velocity when it takes its prey ; legs and feet of a yellowish clay colour, the toes, and the hind part of the legs, with a dash of dusky ; claws greatly falcated ; when the wings are closed they extend to the centre of the tail.

Length, from the tip of the bill to the end of the tail, two feet ten inches,* breadth three feet ten inches ; bill to the angle of the mouth full four inches ; tail, ten inches and a half, composed of twelve broad and stiff feathers ; weight three pounds and a half.

The serratures of the bill are extremely sharp, so much so that when one applies tow, or such like substance, to the bird's mouth, it is with difficulty disengaged.

The lower mandible and throat, as in the divers, are capable of great expansion to facilitate the swallowing of fish, which constitute the food of this species. The position of these birds, when standing, is like that of the gannets.

The above description was taken from a fine adult male specimen, which was shot by my fellow-traveller, Mr T. Peale, on the 1st of March, 1818, in a creek below the Cow Ford, situated on the river St John, in East Florida. We saw some others in the vicinity, but, owing to their extreme vigilance and shyness, we could not procure them.

From the description of the white-bellied darter of Latham and others, which is unquestionably this species, one would be inclined to conjecture, that the bird figured as the female is the young male. But this point it is

* The admeasurement of the specimen described in the first edition of the ninth volume, was made by Wilson himself from the stuffed bird in Peale's museum. It differs considerably from that described above ; but as our specimen was a very fine one, there is room to conjecture that there was some error in the admeasurement of the former, ours being described immediately after death.

not in my power to ascertain. All the darters which I saw, while in Florida, were males.

The snake bird is an inhabitant of the Carolinas, Georgia, the Floridas, and Louisiana, and is common in Cayenne and Brazil. It seems to have derived its name from the singular form of its head and neck, which at a distance might be mistaken for a serpent. In those countries where noxious animals abound, we may readily conceive that the appearance of this bird, extending its slender neck through the foliage of a tree, would tend to startle the wary traveller, whose imagination had portrayed objects of danger lurking in every thicket. Its habits, too, while in the water, have not a little contributed to its name. It generally swims with its body immersed, especially when apprehensive of danger, its long neck extended above the surface, and vibrating in a peculiar manner. The first individual that I saw in Florida was sneaking away, to avoid me, along the shore of a reedy marsh, which was lined with alligators, and the first impression on my mind was that I beheld a snake, but the recollection of the habits of the bird soon undeceived me. On approaching it, it gradually sank, and my next view of it was at many fathoms distance, its head merely out of the water. To pursue these birds at such times is useless, as they cannot be induced to rise, or even expose their bodies.

Wherever the limbs of a tree project over, and dip into the water, there the darters are sure to be found, these situations being convenient resting places for the purpose of sunning and preening themselves, and, probably, giving them a better opportunity than when swimming of observing their finny prey. They crawl from the water upon the limbs, and fix themselves in an upright position, which they maintain in the utmost silence. If there be foliage, or the long moss, they secrete themselves in it in such a manner that they cannot be perceived, unless one be close to them. When approached, they drop into the water with such surprising skill, that one is astonished how so large a body can plunge with so little noise, the agitation of

the water being apparently not greater than that occasioned by the gliding of an eel.

Formerly the darter was considered by voyagers as an anomalous production, a monster partaking of the nature of the snake and the duck; and, in some ancient charts which I have seen, it is delineated in all the extravagance of fiction.

From Mr William Bartram we have received the following account of the subject of our history:—

“Here is in this river,* and in the waters all over Florida, a very curious and handsome bird,—the people call them snake birds; I think I have seen paintings of them on the Chinese screens and other Indian pictures; they seem to be a species of *colymbus*, but far more beautiful and delicately formed than any other that I have ever seen. They delight to sit in little peaceable communities, on the dry limbs of trees, hanging over the still waters, with their wings and tails expanded, I suppose to cool and air themselves, when at the same time they behold their images in the watery mirror. At such times, when we approach them, they drop off the limbs into the water, as if dead, and for a minute or two are not to be seen; when on a sudden, at a great distance, their long slender head and neck appear, like a snake rising erect out of the water; and no other part of them is to be seen when swimming, except sometimes the tip end of their tail. In the heat of the day they are seen in great numbers, sailing very high in the air over lakes and rivers.

“I doubt not but if this bird had been an inhabitant of the Tiber in Ovid’s days, it would have furnished him with a subject for some beautiful and entertaining metamorphoses. I believe they feed entirely on fish, for their flesh smells and tastes intolerably strong of it: it is scarcely to be eaten, unless one is constrained by insufferable hunger. They inhabit the waters of Cape Fear River, and, southerly, East and West Florida.”†

* The river St Juan, East Florida.

† BARTRAM’S *Travels*, p. 132. —MS. in the possession of the author [Mr Ord.]

290. *PLOTUS MELANOGASTER*, WILSON.

FEMALE BLACK-BELLIED DARTER, OR SNAKE BIRD.*

WILSON, PLATE LXXIV. FIG. II. — EDINBURGH COLLEGE MUSEUM.

THE female darter measures three feet five inches in length, and differs in having the neck before of a roan colour or iron gray, the breast the same, but lighter, and tinged with pale chestnut; the belly as in the male; where the iron gray joins the black on the belly there is a narrow band of chestnut; upper head and back of the neck, dark sooty brown, streaked with blackish; cheeks and chin, pale yellow ochre; in every other respect the same as the male, except in having only a few slight tufts of hair along the side of the neck; the tail is twelve inches long to its insertion, generally spread out like a fan, and crumpled like the other on the outer vanes of the middle feathers only.

The above is a description of the supposed female darter, which is preserved in Peale's museum.

The author having written to Mr John Abbott of Georgia, relative to this species, and some others, received from this distinguished naturalist a valuable communication, from which the following extract is made:—"Both the darters I esteem as but one species. I have now by me a drawing of the male, or black-bellied, only, but have had specimens of both at the same time. I remember that the upper parts of the female were similar to those of the male, except that the colour and markings were not so pure and distinct; length, thirty-six inches, extent, forty-six. These birds frequent the ponds, rivers, and creeks, during the summer; build in the trees of the swamps, and those of the islands in the ponds; they construct their nests of sticks; eggs of a sky blue colour. I inspected a nest, which was not very large; it contained two eggs and six young ones, the latter varying much in size; they

* This article was written by Mr Ord.

will occupy the same tree for a series of years. They commonly sit on a stump, which rises out of the water, in the mornings of the spring, and spread their wings to the sun, from which circumstance they have obtained the appellation of sun birds. They are difficult to be shot when swimming, in consequence of only their heads being above the water."

Never having seen a specimen of the black-bellied darter of Senegal and Java, I cannot give an opinion touching its identity with ours.

FAMILY XXVI.

PYGOPODES, ILLIGER.

GENUS LXVIII — *COLYMBUS*, LINNÆUS.

291. *COLYMBUS GLACIALIS*, LINNÆUS AND WILSON.

GREAT NORTHERN DIVER, OR LOON.*

WILSON, PLATE LXXIV. FIG. III. — EDINBURGH COLLEGE MUSEUM.

THIS bird in Pennsylvania is migratory. In the autumn it makes its appearance with the various feathered tribes that frequent our waters; and, when the streams are obstructed with ice, it departs for the Southern States.† In the months of March and April it is again seen, and, after lingering awhile, it leaves us for the purpose of breeding. The loons are found along the coast as well as in the interior; but in the summer they retire to the fresh water lakes and ponds. We have never heard that they breed in Pennsylvania, but it is said they do in Missibisci pond, near Boston, Massachusetts. The female lays two large brownish eggs. They are commonly seen in pairs, and procure their food, which is fish, in the deepest water of our rivers, diving after it, and continuing under for a length of time. Being a wary bird, it is seldom they are killed, eluding their pursuers by their astonishing faculty of diving. They seem averse from flying, and are but seldom seen on the wing. They are never eaten.

The loon is restless before a storm; and an experienced master of a coasting vessel informed me, that he always knew when a tempest was approaching by the cry of this bird, which is very shrill, and may be heard at the distance of a mile or more. The

* This article is by Mr Ord.

† The loon is said to winter in the Chesapeake Bay.

correctness of this observation I have myself since experienced in a winter voyage on the southern coasts of the United States.

This species seldom visits the shores of Britain, except in very severe winters; but it is met with in the north of Europe, and spreads along the arctic coast as far as the mouth of the river Ob, in the dominions of Russia. It is found about Spitzbergen, Iceland, and Hudson's Bay. Makes its nest, in the more northern regions, on the little isles of fresh water lakes: every pair keep a lake to themselves. It sees well, flies very high, and, darting obliquely, falls secure into its nest. Appears in Greenland in April or the beginning of May, and goes away in September or October, on the first fall of snow.* It is also found at Nootka Sound † and Kamtschatka.

The Barabuzians, a nation situated between the river Ob and the Irtsch, in the Russian dominions, tan the breasts of this and other water fowl, whose skins they prepare in such a manner as to preserve the down upon them, and, sewing a number of these together, they sell them to make pelisses, caps, &c. Garments made of these are very warm, never imbibing the least moisture, and are more lasting than could be imagined.‡

The natives of Greenland use the skins for clothing, and the Indians about Hudson's Bay adorn their heads with circlets of their feathers.§

Lewis and Clark's party, at the mouth of the Columbia, saw robes made of the skins of loons, || and abundance of these birds during the time that they wintered at Fort Clatsop on that river.**

The Laplanders, according to Regnard, cover their heads with a cap made of the skin of a loon, (loon,) which word signifies in their language lame, because the bird cannot walk well. They place it on their head in such a manner, that the bird's head falls over their brow, and its wings cover their ears.

* PENNANT. † Cook's *Last Voyage*, II. p. 237, Am. ed.

‡ LATHAM. § *Arctic Zoology*. || GASS's *Journal*.

** *History of the Expedition*, vol. II, p. 189.

"Northern divers," says Hearne, "though common in Hudson's Bay, are by no means plentiful; they are seldom found near the coast, but more frequently in fresh water lakes, and usually in pairs. They build their nests at the edge of small islands, or the margins of lakes or ponds; they lay only two eggs, and it is very common to find only one pair and their young in one sheet of water: a great proof of their aversion to society. They are known in Hudson's Bay by the name of loons."*

The great northern diver measures two feet ten inches from the tip of the bill to the end of the tail, and four feet six inches in breadth; the bill is strong, of a glossy black, and four inches and three quarters long to the corner of the mouth; the edges of the bill do not fit exactly into each other, and are ragged, the lower mandible separates into two branches, which are united by a thin elastic membrane, and are easily movable horizontally or receding from each other, so as to form a wider gap to facilitate the swallowing of large fish; tongue, bifid; irides, dark blood red; the head and half of the length of the neck, are of a deep black with a green gloss, and purple reflections; this is succeeded by a band consisting of interrupted white and black lateral stripes, which encompasses the neck, and tapers to a point on its fore part, without joining,—this band measures about an inch and a half in its widest part, and, to appearance, is not continuous on the back part of the neck, being concealed by some thick, overhanging, black feathers, but, on separating the latter, the band becomes visible: the feathers which form these narrow stripes are white, streaked down their centre with black, and, what is a remarkable peculiarity, their webs project above the common surface; below this a broad band of dark glossy green and violet, which is blended behind with the plumage of the back; the lower part of the neck and the sides of the breast, are ribbed in the same manner as the band above; below the chin

* HEARNE'S *Journey*, p. 429, quarto.

a few stripes of the same; the whole of the upper parts are of a deep black, slightly glossed with green, and thickly spotted with white, in regular transverse or semicircular rows, two spots on the end of each feather, — those on the upper part of the back, shoulders, rump, and tail-coverts, small and roundish, those on the centre of the back, square and larger; those on the scapulars are the largest, and of an oblong square shape; the wing-feathers and tail are plain brown black, the latter composed of twenty feathers; the lower parts are pure white, a slight dusky line across the vent; the scapulars descend over the wing when closed, and the belly feathers ascend so as to meet them, by which means every part of the wing is concealed, except towards the tip; the outside of the legs and feet is black, inside lead colour; the leg is four inches in length, and the foot measures, along the exterior toe to the tip of its claw, four inches and three quarters; both legs and feet are marked with five-sided polygons; weight of the specimen described, eight pounds and a half.

The female diver is somewhat less than the male; the bill is yellowish; crown, back part of the neck, and whole upper parts, pale brown; the plumage of part of the back and scapulars is tipped with pale ash; the throat, lower side of the neck, and whole under parts, are white, but not so pure as that of the male, having a yellowish tinge; the quill feathers dark brown. She has no appearance of bands on her neck, or of spots on her body.

The young males do not obtain their perfect plumage until the second or third year. One which we saw, and which was conjectured to be a yearling, had some resemblance to the female, with the exception of its upper parts being of a darker and purer brown or mouse colour, and its under parts of a more delicate white; it had likewise a few spots on the back and scapulars; but none of those markings on the neck which distinguish the full grown male.

The conformation of the ribs and bones of this species is remarkable, and merits particular examination.

In the account which some of the European ornithologists give of their northern diver, we presume there is an inaccuracy. They say it measures three feet six inches in length, and four feet eight in breadth, and weighs sixteen pounds. If this be a correct statement, it would lead to the surmise that our diver is a different species; for of several specimens which we examined, the best and largest has been described for this work, the admeasurement of which bird comes considerably short of that of the European mentioned above. The weight, as has been stated, was eight pounds and a half.

According to Temminck, the adult male and female are alike in plumage. All the females which have passed under my examination differed from the old males; and it is the universal opinion among our sportsmen who reside on the coast, where the loons are common, that the adults of both sexes may always be distinguished by their garb. However, in confirmation of Temminck's opinion, I can adduce the authority of the Prince of Musignano, Charles Lucian Bonaparte, who has informed me, that he has in his collection a female which was shot in the Delaware, and which differs in no respect from the adult male.

On a re-examination of the *Supplement to the Ornithological Dictionary* of Montagu, I find upon this subject the following remarks, which should seem to put the question at rest respecting the identity of the European and American species:—"It should appear that the size of this species has been commonly exaggerated, or they must vary very materially, since those which have come under our examination did not exceed ten pounds; and an old or matured male measured only two feet eight inches. A young female, before the plumage was perfected, weighed eight pounds six ounces, and measured two feet seven inches in length.

"A northern diver, taken alive, was kept in a pond for some months, which gave us an opportunity of attending to its manners. In a few days it became extremely docile, would come at the call from one side

of the pond to the other, and would take food from the hand. The bird had received an injury in the head, which had deprived one eye of its sight, and the other was a little impaired; but, notwithstanding, it could, by incessantly diving, discover all the fish that was thrown into the pond. In defect of fish, it would eat flesh.

"It is observable, that the legs of this bird are so constructed and situated as to render it incapable of walking upon them. This is probably the case with all the divers, as well as the grebes.

"When this bird quitted the water, it shoved its body along upon the ground, like a seal, by jerks, rubbing the breast against the ground, and it returned again to the water in a similar manner. In swimming and diving* only the legs are used, and not the wings, as in the guillemot and auk tribes, and by their situation so far behind, and their little deviation from the line of the body, the bird is enabled to propel itself in the water with great velocity in a straight line, as well as turn with astonishing quickness."

292. *URIA ALLE*, TEMMINCK. — *ALCA ALLE*, WILSON.

LITTLE GUILLEMOT. †

WILSON, PLATE LXXIV. FIG. V.

Of the history of this little stranger, but few particulars are known. With us it is a very rare bird, and, when seen, it is generally in the vicinity of the sea. The specimen described was killed at Great Egg Harbour in the month of December, 1811, and was sent to Wilson as a great curiosity. It measured nine inches in length, and fourteen in extent; the bill, upper part of

* I have never seen this bird diving in pursuit of fish, but I have seen it in the act of diving to avoid danger, and took notice that its wings, when beneath the surface of the water, did not lie close to the body, but they were not as much extended as when in the act of flying. They had no visible motion, hence the presumption is that their only use is to balance the body.

† Named in the plate, Little Auk. This article is written by Mr Ord.

the head, back, wings, and tail, were black; the upper part of the breast and hindhead, were gray, or white, mixed with ash; the sides of the neck, whole lower parts, and tips of secondaries, were pure white; feet and legs, black; shins, pale flesh colour; above each eye, there was a small spot of white;* the lower scapulars, streaked slightly with the same.

The little guillemot is said to be but a rare visitant of the British isles. It is met with in various parts of the north, even as far as Spitzbergen; is common in Greenland, in company with the black-billed auk, and feeds upon the same kind of food. The Greenlanders call it the ice-bird, from the circumstance of its being the harbinger of ice. It lays two bluish white eggs, larger than those of the pigeon. It flies quick, and dives well; and is always dipping its bill into the water while swimming, or at rest on that element; walks better on land than others of the genus. It grows fat in the stormy season, from the waves bringing plenty of crabs and small fish within its reach. It is not a very crafty bird, and may be easily taken. It varies to quite white, and sometimes is found with a reddish breast.†

To the anatomist, the internal organization of this species is deserving attention: it is so constructed as to be capable of contracting or dilating itself at pleasure. We know not what Nature intends by this conformation, unless it be to facilitate diving, for which the compressed form is well adapted; and likewise the body, when expanded, will be rendered more buoyant, and fit for the purpose of swimming upon the surface of the water.

* In Peale's Museum, there is an excellent specimen of this species, which has likewise a smaller spot below each eye.

† LATHAM; PENNANT.

SYNONYMS ;

OR,

**NAMES GIVEN TO THE DIFFERENT BIRDS, IN
WILSON'S AMERICAN ORNITHOLOGY, BY
TRAVELLERS AND NATURALISTS**

NOTICE.

We have judged it proper to reprint the Synonyms of Wilson as they stand in the original work. They are here arranged according to the system adopted by us in this the British edition of the American Birds.

SYNONYMS TO VOLUME FIRST.

I. — Page 3.

FURKEY VULTURE, OR TURKEY BUZZARD.

CATHARTES AURA, HILIGER. — *FULTUR AURA*, WILSON.

WILSON, Plate IXXV Fig. 1 — Uruba, aura Tzopilotl, *Marcgrave, Mexico*, 207, 208. — *Hernandez, Mer.* 331. — Vultur Gallinæ Africanæ facie, Carrion Crow, *Shoane, Jam.* 2, p. 294, tab. 254. — *Brown, Jam.* 471. — *Damp. Voy.* 2, pt. 2, p. 67. — *Bartram's Travels*, p. 289. — *Catesby's Carolina*, 1, 6. — *Corvus sylvaticus, Barrere*, 129. — *Lawson's Carolina*, 138. — *Bancroft*, 152. — *Du Pratz*, 2, 77. — *Will. Orn.* 68. — *Ram Syn.* No. 180. — *Linn. Syst.* 122. — Carrion Vulture, *Lath. Gen. Syn.* 1, 9. No. 5. *Id. Sup.* p. 2. — *Penn. Arct. Zool.* 1, p. 221. — Vantour du Brésil, *De Buff. Ois.* 1, 246. *Pl. enl.* No. 187. — *Brisson*, 1, 468. — Cozcaquauhth, *Clavigero, Hist. Mex.* 1, 47. — *Peale's Museum*, No. 11, male — 12, female. — Edinburgh College Museum.

II. — Page 10.

BLACK VULTURE, OR CARRION CROW OF AMERICA

CATHARTES ATRATUS. — *FULTUR AFRATUS*, WILSON.

WILSON, Plate IXXV. Fig. 2. — *Bartram*, p. 289. — Gallinazo, *Ullna, Voy.* 1, p. 52. — Zopilot, *Clavigero, Hist. Mex.* vol. 1, p. 47. — Vultur jota, *Molina, Hist. Chili*, 1, p. 185. — *Peale's Museum*, No. 13. — Edinburgh College Museum.

III. — Page 20.

RING-TAIL EAGLE.

FALCO FULFUS, LINNÆUS.

WILSON, Plate LV. Fig. 1. — *Linn. Syst.* 125. — Black Eagle, *Arct. Zool.* p. 195, No. 87. — *Lath.* 1, 32, No. 6. — White-tailed

Eagle, *Edw.* 1, 1. — L'Aigle Commun, *Buff.* 1, 86. *Pl. enl.* 409. — *Bewick*, 1, p. 49. — *Turt. Syst.* p. 145. — *Peale's Museum*, No. 84. — Edinburgh College Museum.

IV. — Page 22.

WHITE-HEADED, OR BALD EAGLE

FALCO LEUCOCEPHALUS, LINNÆUS.

WILSON, Plate xxxvi. — *Linn. Syst.* 124. — *Lath.* 1, 29. — Le Pygargue à tête blanc, *Buff.* 1, 99. *Pl. enl.* 411. — *Arct. Zool.* 196, No. 89. — Bald Eagle, *Catesb.* 1, 1. — *Peale's Museum*, No. 78. — Edinburgh College Museum.

V. — Page 33.

SEA EAGLE

FALCO OSSIFRAGUS, WILSON.

WILSON, Plate lv. Fig. 2. — *Arct. Zool.* p. 194, No. 86. — *Linn. Syst.* 124. — *Lath.* 1, 30. — L'Ornais, *Buff.* 1, 112, pl. 3. *Pl. enl.* 12, 415. — *Br. Zool.* 1, No. 44. — *Bewick*, 1, 53. — *Turt. Syst.* p. 144. — *Peale's Museum*, No. 80. — Edinburgh College Museum.

VI. — Page 38.

FISH-HAWK, OR OSPREY.

FALCO HALIÆTUS, LINNÆUS.

WILSON, Plate xxxvii. Fig. 1. — Carolina Osprey, *Lath. Syn.* 1, p. 46—26, A. — *Falco piscator*, *Briss.* 1, p. 361, 14, 362, 15. — Faucon pêcheur de la Caroline, *Buff.* 1, p. 142. — Fishing Hawk, *Catesb. Car.* 1, p. 2. — *Turt. Syst.* 1, 149. — *Peale's Museum*, No. 144. — Edinburgh College Museum.

VII. — Page 51.

GREAT FOOTED HAWK, OR PEREGRINE FALCON.

FALCO PEREGRINUS, WILSON.

WILSON, Plate lxxvi. — *Rari Syn.* p. 13, No. 1. — *Turt. Syst.* 1, p. 155. — *Belon, Aves*, 116. — *Falco peregrinus niger*, *Aldr. Aves*, 1, 239. — Sparviere pellegrino femmina, *Lorenzi, Aves*, tab. 24. — Blue-backed Falcon, *Charletoni, Exercit.* 73. — Peregrine Falcon, *Penn. Br. Zool.* 1, p. 156, No. 48, pl. 20. — *Arct. Zool.* 1, p. 236, No. 97. — *Lath. Syn.* 1, p. 73, No. 52. — Peregrine, or haggard Falcon, *Will. Orn.* p. 76, tab. 8. — Spotted Hawk or Falcon, *Edwards*, 1, p. 3. — Black Hawk or Falcon, *Idem*, 1, p. 4. — Le Faucon pelerin, *Briss. Aves*, 1, 341. — *Buff. Ois.* 1, p. 249, pl. 16, et suiv. — *Peale's Museum*, No. 386. — Edinburgh College Museum.

VIII. — Page 56.

AMERICAN SPARROW HAWK.

FALCO SPARVERIUS, LINNÆUS.

WILSON, Plate xvi. Fig. 1. female. — Emerillon de St Domingue, *Buff.* 1, 291. *Pl. enl.* 465. — *Arct. Zool.* 212. — Little Falcon, *Lath. Syn.* v. 1, p. 110, No. 94. *Ib.* 95. — *Peale's Museum*, No. 389. — Edinburgh College Museum.

IX. — Page 60.

AMERICAN SPARROW HAWK

FALCO SPARVERIUS, LINNÆUS.

WILSON, Plate xxxii. Fig. 2. male. — Little Hawk, *Arct. Zool.* 211, No. 110 — Emerillon de Cayenne, *Buff.* 1, 291. *Pl. enl.* No. 444. — *Lath.* 1, 110. — *Peale's Museum*, No. 340. — Edinburgh College Museum.

X. — Page 61.

PIGEON HAWK

FALCO COLUMBARIUS, LINNÆUS.

WILSON, Plate xv. Fig. 3. male. — *Linn. Syst.* p. 128, No. 21. — *Lath. Syn.* v. 1, p. 101, No. 86. — L'Epervier de la Caroline, *Briss. Orn.* 1, p. 238. — *Catesb.* 1, p. 3, t. 3. — *Bartram*, p. 290. — *Turton, Syst.* v. 1, p. 162. — *Peale's Museum*, No. 352. — Edinburgh College Museum.

XI. — Page 63.

ASH-COLOURED, OR BLACK-CAP HAWK.

FALCO PALUMBARIUS, LINN. — *FALCO ATRICAPILLUS*, WILSON.

WILSON, Plate lili. Fig. 3. — *Peale's Museum*, No. 406. — Edinburgh College Museum.

XII. — Page 65.

BROAD-WINGED HAWK

FALCO PENNSYLVANICUS, WILSON.

WILSON, Plate liv. Fig. 1. — *Peale's Museum*, No. 407.

XIII. — Page 68.

SHARP-SHINNED HAWK

FALCO VELOX.

WILSON, Plate xlv. Fig. 1. young bird.

XIV. — Page 70.

SLATE-COLOURED HAWK

FALCO PENNSYLVANICUS, WILSON.

WILSON, Plate XLVI. Fig. 1. old bird.

XV. — Page 72.

MISSISSIPPI KITL

FALCO MISSISSIPPIENSIS, WILSON.WILSON, Plate XXV. Fig. 1. male. — *Peale's Museum*, No. 403.

XVI. — Page 75.

SWALLOW-TAILED HAWK.

FALCO FURCATUS.

WILSON, Plate LI. Fig. 2 male. — *Linn. Syst.* 129. — *Lath.* 1, 60. — *Hirundo maxima Peruviana avis prædatoris calcareibus instructa*, *Feuillee, Voy. Peru*, tom. 2, 33. — *Catesb.* 1, 4. — *Le Melan de la Caroline*, *Bruss.* 1, 418. — *Buff.* 1, 221. — *Turt. Syst.* 149. — *Arct. Zool.* p. 210, No. 108. — *Peale's Museum*, No. 142. — Edinburgh College Museum.

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ROUGH-LEGGED FALCON

FALCO LAGOPUS, WILSON.

WILSON, Plate XXXIII. Fig. 1. — *Arct. Zool.* p. 200, No. 92. — *Latham*, 1, 75. — *Peale's Museum*, No. 116. — Edinburgh College Museum.

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BLACK HAWK

FALCO NIGER, WILSON. — *FALCO SANCTI-JOHNANNIS*, GMFLIN.

WILSON, Plate LIII. Fig. 1. adult bird. — *Peale's Museum*, No. 404.

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BLACK HAWK.

WILSON, Plate LIII. Fig. 2. young bird. — *Peale's Museum*, No. 405.

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RED-TAILED HAWK

FALCO BOREALIS, WILSON.

WILSON, Plate LII. Fig. 1. adult — *Arct. Zool.* p. 205, No. 100. — American Buzzard, *Lath.* 1, 50. — *Turt. Syst.* p. 151 — F. *Aquilinus cauda ferruga*, Great Eagle Hawk, *Bartram*, p. 290. — *Peale's Museum*, No. 182.

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AMERICAN BUZZARD, OR WHITE-BREASTED HAWK

FALCO LEFFERIANUS.

WILSON, Plate LII. Fig. 1. — *Peale's Museum*, No. 400.

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WINFLR FALCON

FALCO HYEMALIS, WILSON.

WILSON, Plate XXXV. Fig. 1. adult male. — *Turton, Syst.* p. 156 — *Arct. Zool.* p. 209, No. 107. — *Peale's Museum*, No. 272 and 273.

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RED-SHOULDERED HAWK

FALCO LINTAUS, WILSON.

WILSON, Plate LIII. Fig. 3 — *Arct. Zool.* p. 206, No. 102. — *Lath.* 1, 56, No. 36. — *Turt. Syst.* p. 153. — *Peale's Museum*, No. 203.

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MARSH HAWK

FALCO ULIGINOSUS, WILSON. — *FALCO CYANEUS*, LINNAEUS.

WILSON, Plate LI. Fig. 1. young female. — *Edw.* 4, 291. — *Lath.* 1, 90 — *Arct. Zool.* p. 208, No. 105. — *Bartram*, p. 290 — *Peale's Museum*, No. 318.

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HAWK OWL.

STRIA HUDSONIA, WILSON.

WILSON, Plate I. Fig. 6. — Little Hawk Owl, *Edw.* 62. — *Lath.* 1, 142, No. 29. — *Phil. Trans.* 61, 385. — Le Chat-huant de Canada. *Briss.* 1, 518. — *Buff.* 1, 391. — Chouette a longue queue de Sibirie, *Pl. enl.* 463. — *Arct. Zool.* p. 234, No. 123. — *Peale's Museum*, No. 500. — Edinburgh College Museum.

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SNOW OWL.

STRIX NYCTEA, WILSON.

WILSON, Plate xxxii. Fig. 1. male. — *Lath.* 1, 132, No. 17. — *Buffon*, 1, 387. — Great White Owl, *Edw.* 61. — Snowy Owl, *Arct. Zool.* 233, No. 121. — *Peale's Museum*, No. 458. — Edinburgh College Museum.

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MOTTLED OWL.

STRIX NÆVIA, WILSON.

WILSON, Plate xix. Fig. 1. adult. — *Arct. Zool.* 231, No. 118. — *Lath.* 1, 126. — *Turton*, 1, 167. — *Peale's Museum*, No. 444.

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RED OWL.

STRIX ASIO, WILSON.

WILSON, Plate xlii. Fig. 1. — Little Owl, *Catesb.* 1, 7. — *Lath.* 1, 123. — *Linn. Syst.* 132. — *Arct. Zool.* 2, No. 117. — *Turt. Syst.* 1, p. 166. — *Peale's Museum*, No. 428.

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GREAT HORNED OWL.

STRIX VIRGINIANA, WILSON.

WILSON, Plate l. Fig. 1. — *Arct. Zool.* p. 228, No. 114. — *Edw.* 60. — *Lath.* 1, 119. — *Turt. Syst.* p. 166. — *Peale's Museum*, No. 410. — Edinburgh College Museum.

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LONG-EARED OWL.

STRIX OTUS, WILSON.

WILSON, Plate li. Fig. 1. — *Turt. Syst.* p. 167. — *Bewick*, 1, p. 84. — *Peale's Museum*, No. 434. — Edinburgh College Museum.

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SHORT-EARED OWL.

STRIX BRACHYOTOS, WILSON.

WILSON, Plate xxxiii. Fig. 3. male. — *Turton, Syst.* p. 167. — *Arct. Zool.* p. 229, No. 116. — *Lath.* 1, 124. — La Chouetté,

ou la grand Chevêche, *Buff.* 1. *Pl. enl.* 438. — *Peale's Museum*, No. 440. — Edinburgh College Museum.

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BARRLED OWL.

STRIX NEBULOSA, LINNÆUS.

WILSON, Plate xxviii. Fig. 2. — *Turton, Syst.* 169. — *Arct. Zool.* p. 234, No. 122. — *Lath.* 133. — *Strix acclamator*, the Whooping Owl, *Bartram*, 289. — *Peale's Museum*, No. 464. — Edinburgh College Museum.

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LITTLE OWL.

STRIX PASSERINA, LINNÆUS. — *STRIX ACADICA*, GMELIN.

WILSON, Plate xxxiv. Fig. 1. — *Arct. Zool.* 236, No. 126. — *Turton, Syst.* 172. — *Peale's Museum*, No. 522. — Edinburgh College Museum.

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WHITE OR BARN OWL.

STRIX FLAMMEA, LINNÆUS.

WILSON, Plate 1. Fig. 2. — *Lath.* 1, 138. — *Arct. Zool.* p. 235, No. 124. — *Phil. Trans.* 3, 138. — L'Effraie, ou L'Effrasaie, *Buff.* 1, 366, plate 26. *Pl. enl.* 440. — *Bewick's British Birds*, 1, p. 89. — Common Owl, *Turt. Syst.* p. 170. — *Peale's Museum*, No. 486. — Edinburgh College Museum.

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CAROLINA PARROT.

PSITTACUS CAROLINENSIS, WILSON.

WILSON, Plate xxvi. Fig. 1. — *Linn. Syst.* 141. — *Catesby*, 1, 11. — *Latham*, 1, 227. — *Arct. Zool.* 242, No. 132. *Ibid.* 133. — *Peale's Museum*, No. 762. — Edinburgh College Museum.

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YELLOW-BILLED CUCKOO.

COCCYZUS AMERICANUS, BON. — *CUCULUS CAROLINENSIS*, WILS.

WILSON, Plate xxviii. Fig. 1. — *Cuculus Americanus*, *Linn. Syst.* 170. — *Catesb.* 1, 9. — *Lath.* 1, 537. — Le Coucou de la Caroline, *Briss.* 4, 112. — *Arct. Zool.* 265, No. 155. — *Peale's Museum*, No. 1778. — Edinburgh College Museum.

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BLACK-BILLED CUCKOO

COCYZUS LARYTHROPTALMUS, BONAPARTE.*CUCULUS FRYTHROPTALMUS*, WILSON.

WILSON, Plate XXVIII. Fig. 2. — *Peale's Museum*, No. 1854
— Edinburgh College Museum.

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IVORY-BILLED WOODPECKER.

PICUS PRINCIPALIS, LINNÆUS.

WILSON, Plate XXIX. Fig. 1. male. — *Picus principalis*, *Linn. Syst.* 1, p. 173, 2. — *Gmel. Syst.* 1, p. 425. — *Picus niger* *Caro linensis*, *Briss.* 4, p. 26, 9. *Id.* 8vo. 2, p. 49. — *Pic* noir à bec blanc, *Buff.* 7, p. 46. *Pl. enl.* 690. — King of the Woodpeckers *Kalm*, vol. 2, p. 85. — White-billed Woodpecker, *Catesb. Car.* 1, 6, 16. — *Arct. Zool.* 2, No. 156. — *Lath. Syn.* 2, p. 553. — *Bartram*, p. 289. — *Peale's Museum*, No. 1884. — Edinburgh College Museum.

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PILEATED WOODPECKER

PICUS PILEATUS, LINNÆUS.

WILSON, Plate XXX. Fig. 2. male. — *Picus niger*, *crista rubra*. *Lath. Ind. Orn.* 1, p. 225, 4. — *Picus pileatus*, *Linn. Syst.* 1, p. 173, 3. — *Gmel. Syst.* 1, p. 425. — *Picus Virginianus pileatus*, *Briss.* 4, p. 29, 10. *Id.* 8vo. 2, p. 50. — *Pic* noir à huppé rouge, *Buff.* 7, p. 48. — *Pic* noir huppé de la Louisiane, *Pl. enl.* 718. — Larger crested Woodpecker, *Catesb. Car.* 1, 6, 17. — Pileated Woodpecker, *Arct. Zool.* 2, No. 157. — *Lath. Syn.* 2, p. 554, 3. *Id. Sup.* p. 105. — *Bartram*, p. 289. — *Peale's Museum*, No. 1886. — Edinburgh College Museum.

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GOLD-WINGED WOODPECKER.

PICUS AURATUS, LINNÆUS.

WILSON, Plate III. Fig. 1. — Le *Pic* aux ailes dorée, *De Buffon*, 7, 39. *Pl. enl.* 693. — *Picus Auratus*, *Linn. Syst.* 174. — *Cuculus alba deauratus*, *Klein.* p. 30. — *Catesby*, 1, 18. — *Latham*, 2, 597. — Edinburgh College Museum.

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RED-HEADED WOODPECKER.

PICUS ERYTHROCEPHALUS, LINNÆUS.

WILSON, Plate IX. Fig. 1. — *Picus erythrocephalus*, *Linn. Syst.* 1, 174, 7. — *Gmel. Syst.* 1, 429. — Pic noir à domino rouge, *Buffon*, 7, 55. *Pl. enl.* 117. — *Catesb.* 1, 20. — *Arct. Zool.* 2, No. 160. — *Lath. Syn.* 2, 561. — *Peale's Museum*, No. 1922. — Edinburgh College Museum.

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RED-BELLIED WOODPECKER.

PICUS CAROLINUS, LINNÆUS.

WILSON, Plate VII. Fig. 2. — *Picus Carolinensis*, *Linn. Syst.* 1, 174, 10. — Pic varié de la Jamaïque, *Buffon*, 7, 72. *Pl. enl.* 597. — *Picus varius medius Jamaicensis*, *Sloan. Jam.* 299, 15. — Jamaica Woodpecker, *Edw.* 244. — *Cates.* 1, 19. fig. 2. — *Arct. Zool.* 2, No. 161. — *Lath. Syn.* 2, 570, 17. *Id.* 571, 17. A. *Id.* B. — L'Epouche rayé de la Louisiane, *Buff.* 7, 73. *Pl. enl.* 692. — *Peale's Museum*, No. 1944. — Edinburgh College Museum.

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YELLOW-BELLIED WOODPECKER.

PICUS VARIUS, LINNÆUS.

WILSON, Plate IX. Fig. 2. adult male. — *Picus varius*, *Linn. Syst.* 1, 176, 20. — *Gmel. Syst.* 1, 435. — Le pic varié de la Caroline, *Buffon*, 7, 77. *Pl. enl.* 785. — Yellow bellied Woodpecker, *Cates.* 1, 21. — *Arct. Zool.* 2, No. 166. — *Lath. Syn.* 2, 574, 20. *Id. Sup.* p. 109. — *Peale's Museum*, No. 2004. — Edinburgh College Museum.

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HAIRY WOODPECKER.

PICUS VILLOsus, LINNÆUS.

WILSON, Plate IX. Fig. 3. male. — *Picus Villosus*, *Linn. Syst.* 1, 175, 16. — Pic chevelu de Virginie, *Buffon*, 7, 74. — Pic varié mâle de Virginie, *Pl. enl.* 754. — Hairy Woodpecker, *Cates.* 1, 19, fig. 2. — *Arct. Zool.* 2, No. 164. — *Lath. Syn.* 2, 572, 18. *Id. Sup.* 108. — *Peale's Museum*, No. 1988. — Edinburgh College Museum.

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DOWNY WOODPECKER.

PICUS PUBESCENS, LINNÆUS.

WILSON, Plate ix. Fig. 4. male. — *Picus pubescens*, *Linn. Syst.* 1, 175, 15. — *Gmel. Syst.* 1, 435. — Petit Pic varié de Virginie, *Buffon*, 7, 76 — Smallest Woodpecker, *Catesby*, 1, 21. — *Arct. Zool.* 2, No. 163. — Little Woodpecker, *Lath. Syn.* 2, 573, 19. — *Id. Sup.* 106. — *Peale's Museum*, No. 1986. — Edinburgh College Museum.

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RED-COCKADED WOODPECKER

PICUS QUERULUS, WILSON.

WILSON, Plate xv. Fig. 1. — *Peale's Museum*, No. 2027.

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LEWIS'S WOODPECKER.

PICUS TORQUATUS, WILSON.

WILSON, Plate xx. Fig. 3. — *Peale's Museum*, No. 2020.

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BELTED KINGFISHER.

ALCEDO ALCYON, LINNÆUS.

WILSON, Plate xxiii. Fig. 1. female. — *Bartram*, p. 289. — Turton, p. 278. — *Peale's Museum*, No. 2154. — Edinburgh College Museum.

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MEADOW LARK

STURNUS LUDOVICIANUS, LINN. — *ALAUDA MAGNA*, WILSON.

WILSON, Plate xix. Fig. 2. — *Linn. Syst.* 289. — Crescent Stare, *Arct. Zool.* 330, No. 192. — *Latham*, 3, 6. *Var. A.* — Le Fer-à-cheval, ou Meile à Collier d'Amerique, *Buff.* 3, p. 371. — *Catesb. Car.* 1, pl. 33. — *Bartram*, p. 290. — *Peale's Museum*, No. 5212. — Edinburgh College Museum.

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BALTIMORE BIRD, OR ORIOLE

ICTERUS BALTIMORUS, DAUD. — *ORIOULUS BALTIMORUS*, WILS.

WILSON, Plate 1. Fig. 3. male. — Edinburgh College Museum.

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FEMALE BALTIMORE ORIOLE

ICTERUS BALTIMORUS, DAUD.WILSON, Plate III. Fig. 4. — *Amer. Orn.* v. 1. p. 23.

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ORCHARD ORIOLE

ICTERUS SPURIUS, BONAPARTE. — *ORIOLE MUTATUS*, WILSON.

WILSON, Plate IV. Fig. 1. female, Fig. 2. male, two years old, Fig. 3 male, three years old, Fig. 4. the adult male. — *Peale's Museum*, No. 1508. — Bastard Baltimore, *Catesby*, 1, 49. — Le Baltimore Bataid, *De Buffon*, 3, 233. *Pl. enl.* 506. — Oriolus Spurius, *Gmelin, Syst.* 1, p. 389 — *Lath. Syn.* 2, p. 433, 20. p. 437, 24. — Edinburgh College Museum.

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RED-WINGED STARLING

ICTERUS PHENICEUS, DAUD. — *STURNUS PRIDATORIUS*, WILS.

WILSON, Plate xxx. Fig. 1. male; Fig. 2 female. — *Bartram*, 291. — Oriolus Phœnceus, *Linn. Syst.* 161. — Red-winged Oriole, *Arct. Zool.* 255, No. 140 — Le Troupiale à ailes rouges, *Briss.* 2, 97 — Le Commandeur, *Buff.* 3, 214. *Pl. enl.* 402. — *Lath.* 1, 428. — Acolchichi, *Fernand Nov. Hisp.* p. 14. — *Peale's Museum*, No. 1466, 1467.

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COW BUNTING

ICTERUS PECTORIS, TIMM. — *EMBERIZA PECTORIS*, WILSON.

WILSON, Plate XVIII. Fig. 1. male; Fig. 2 female. — Le Brunet, *Buff.* 4, 138. — Le Pinçon de Vierge, *Briss.* 3, 165. — Cowpen-bird, *Catesb.* 1, 34 — *Lath.* 2, 269. — *Arct. Zool.* p. 371, No. 241. — *Sturnus stercorarius*, *Bartram*, p. 291. — *Peale's Museum*, No. 6378, male; 6379, female.

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RICE BUNTING.

ICTERUS AGRIFFENNIS, BONAP. — *EMBERIZA ORYZIVORA*, WILS.

WILSON, Plate XII. Fig. 1. male, in spring, Fig. 2 female. — *Emberiza oryzivora*, *Linn. Syst.* p. 311, 16. — L'Ortolan de la Caroline, *Briss. Orn.* 3, p. 282, 8, pl. 15, fig. 3, *Pl. enl.* 388, fig. 1. — L'Agripennne, ou L'Ortolan de Riz, *Buff. Ois.* 4, p. 337. — Rice-bird, *Catesb. Car.* 1, pl. 14. — *Edw. pl.* 2. — *Latham*, 2, 188, No. 25. — *Peale's Museum*, No. 6026.

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RUSTY GRAKLE

QUISCALUS FERRUGINUS, BON. — *GRACULA FERRUGINFA*, WILS.

WILSON, Plate XXI. Fig. 3, adult male, in spring. — Black Oriole, *Arc't. Zool.* p. 259 No. 144 — Rusty Oriole, *Ibid* p. 260, No. 146. — New York Thrush, *Ibid.* p. 339, No. 205. — Hudsonian Thrush, *Ibid.* No. 234, female. — Labrador Thrush, *Ibid.* p. 340, No. 206. — *Peale's Museum*, No. 5514

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PURPLE GRAKLE

QUISCALUS PURPURICOLOR, VIEILL. — *GRACULA QUISCALA*, WILS.

WILSON, Plate XXI. Fig. 4. male — *Linn. Syst.* 165. — La Pie de la Jamaïque, *Brisson*, 2, 41. — *Buffon*, 3, 97, *Pl. enl.* 538. — *Arct. Zool.* p. 263, No. 153. — *Gracula Purpurea*, the lesser Purple Jackdaw, or Crow Blackbird, *Bartram*, p. 289. — *Peale's Museum*, No. 1582.

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RAVEN

CORVUS CORAX.

WILSON, Plate LXXV. Fig. 3. — *Turt. Syst.* 1, 218. — *Kerp. Faun. Succ.* No. 85. — *Faun. Grand* p. 62. — *Lecons*, 240. — Le Corbeau, *De Buff* 5, 16, *Pl. enl.* No. 495 — *Briss.* 2, 8. — *Penn. Br. Zool.* 1, No. 74 — *Arct. Zool.* No. 134. — *Lath.* 1, 367. — *Beuvick*, 1, 100 — *Ron Syn* p. 39 — *Will. Orn.* p. 121, pl. 18. — *Alban*, 2, pl. 20 — *Corvus carnyvorus*, *Bartram*, p. 290. — *Peale's Museum*, No. 175. — Edinburgh College Museum.

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CROW

CORVUS CORONA, LINNÆUS.

WILSON, Plate XXXVI. Fig. 3. — *Peale's Museum*, No. 1246. — Edinburgh College Museum.

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FISH CROW

CORVUS OSSIFRAGUS, WILSON.

WILSON, Plate XXXVII. Fig. 2. — *Peale's Museum*, No. 1369.

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CLARK'S CROW.

CORPUS COLUMBIANUS, WILSON.WILSON, Plate XX. Fig. 2. — *Peale's Museum*, No. 1371.

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MAGPIE

CORPUS PICA.WILSON, Plate XXXV. Fig. 2 — *Arct. Zool.* No. 136. — *Lath.* 1, 392. — *Buff.* 3, 89. — *Peale's Museum*, No. 1333. — Edinburgh College Museum.

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BLUE JAY

CORPUS CRISTATUS, LINNAEUS.

WILSON, Plate I. Fig. 1. — Edinburgh College Museum.

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CANADA JAY.

CORPUS CANADIANUS, LINNAEUS.WILSON, Plate XVI. Fig. 1 — *Linn. Syst.* 158 — Cinnereous Crow, *Arct. Zool.* p. 248, No. 157 — *Latham*, 1, 389. — Le Grand Brun de Canada, *Brisson*, 2, 54 — *Buffon*, 3, 117. — Edinburgh College Museum.

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GLDAR BIRD

BOMBYCILLA CAROLINENSIS, BRISSON.*AMPELIS AMERICANA*, WILSON.WILSON, Plate VII. Fig. 1 — *Ampelis garrulus*, *Linn. Syst.* 1, 297, 1, B — *Bombycilla Carolinensis*, *Brisson*, 2, 337 1. *Id.* 8vo. 1, 251 — Chatterer of Carolina, *Cutsh.* 1, 46 — *Arct. Zool.* 2, No 207 — *Lath. Syn.* 3, 93, 1, A. — *Edw.* 242 — *Cook's Last Voyage*, 2, 518 — *Ellis's Voyage*, 2, 13. — *Peale's Museum*, No. 5608. — Edinburgh College Museum.

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CHUCK-WILL'S-WIDOW

CAPRIMULGUS CAROLINENSIS, WILSON AND GMELIN.

WILSON, Plate LIV. Fig. 2. — *Peale's Museum*, No. 7723.

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NIGHT HAWK

CAPRIMULGUS AMERICANUS, WILSON.

WILSON, Plate XI. Fig. 1. male. — Fig. 2. female. — Long-winged Goatsucker, *Arct. Zool.* No. 337. — *Peale's Museum*, No. 7723, male, 7724, female.

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WHIP-POOR-WILL

CAPRIMULGUS VOCIPIFICUS, WILSON.

WILSON, Plate XII. Fig. 1. male. — Fig. 2. female. — Fig. 3. young. — *Peale's Museum*, No. 7721, male, 7722, female.

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CHIMNEY SWALLOW

CYPSELUS PFIASCIUS, TEMM. — *HIRUNDO PFIASGIA*, WILSON.

WILSON, Plate XXXIV. Fig. 1. — *Lath. Syn.* 5, p. 583, 32. — *Catesb. Car. App.* t. 8. — Hirondelle de la Caroline, *Buff.* 6, p. 700. — *Hirundo Carolinensis*, *Briss.* 2, p. 501, 9. — Aculeated Swallow, *Arct. Zool.* 2, No. 335, 18. — *Turt Syst.* p. 630. — *Peale's Museum*, No. 7663. — Edinburgh College Museum.

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PURPLE MARTIN

HIRUNDO PURPURA, LINNÆUS AND WILSON.

WILSON, Plate xxxix Fig. 1. male. — Fig. 2. female. — *Lath Syn.* 4, p. 574, 21. — *Ibid.* 4, p. 575, 23. — *Catesb. Car.* 1, 51. — *Arct. Zool.* 2, No. 383. — Hirondelle bleue de la Caroline, *Buff.* 6, p. 674. — *Pl. enl.* 722 — Le Martinet couleur de pourpre, *Buff.* 6, p. 676 — *Turt. Syst.* 629 — *Edw.* 120 — *Hirundo subis*, *Lath.* 4, p. 575, 24. — *Peale's Museum*, No. 7645, 7646.

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BARN SWALLOW

HIRUNDO AMERICANA, WILSON — *H. RUFa*, GMELIN.

WILSON, Plate xxxviii Fig. 1. male. — Fig. 2. female. — *Peale's Museum*, No. 7609.

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GREEN, BLUE, OR WHITE-BELLIED SWALLOW

HIRUNDO IRIDIS, WILSON. — *H. BICOLOR*, VIEILL.

WILSON, Plate xxxviii Fig. 3. — *Peale's Museum*, No. 7707.

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BANK SWALLOW, OR SAND MARTIN

HIRUNDO RIPARIA, LINNÆUS.

WILSON, Plate xxxviii. Fig. 4. — *Lath Syn.* 4, p. 568, 10 — *Arct. Zool.* 2, No. 382 — L'Hirondelle de rivage, *Buff.* 6, 632. — *Pl. enl.* 543, 1. 2. — *Turt. Syst.* 629. — *Peale's Museum*, No. 7637. — Edinburgh College Museum.

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TYRANT FLYCATCHER, OR KING BIRD

MUSCICAPA TYRANNUS, BRISSON, WILSON, AND LINNÆUS.

WILSON, Plate xiii Fig. 1. — *Lanius Tyrannus*, *Linn. Syst.* 136 — *Lath Syn.* 1, 186. — *Catesb.* 1, 55. — Le Tyran de la Caroline, *Buff.* 4, 577 — *Pl. enl.* 676 — *Arct. Zool.* p. 384, No. 263. — *Peale's Museum*, No. 578. — Edinburgh College Museum

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GREAT CRESTED FLYCATCHER

MUSCICAPA CRINITA, LINNÆUS AND WILSON.

WILSON, Plate XIII. Fig. 2. — *Linn. Syst.* 325. — *Lath* 2, 357. — *Arct. Zool.* p. 346, No. 267. — Le mouche-rolle de Virginie à huppé verte, *Buff.* 4, 565. *Pl. enl.* 569. — *Peale's Museum*, No. 6645.

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SMALL GREEN CRESTED FLYCATCHER.

MUSCICAPA QUIRUA, WILSON. — *M. ACADICA*, GMELIN.

WILSON, Plate XIII Fig 3. — *Muscicapa subvirens*, *Bartram*, p. 289. — *Arct. Zool.* p. 386, No. 268. — *Peale's Museum*, No. 6825.

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PEWIT FLYCATCHER

MUSCICAPA NUNCIOLA, WILSON. — *M. FUSCA*, GMELIN.

Bartram, p. 289. — Black-cap Flycatcher, *Lath. Syn.* 2, 353. — Phoebe Flycatcher, *Id. Supp.* p. 173. — Le gobe-mouche noirâtre de la Caroline, *Buff.* 4, 541. — *Arct. Zool.* p. 387, No. 269. — *Peale's Museum*, No. 6618.

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WOOD PEWEE FLYCATCHER

MUSCICAPA RAPAA, WILSON. — *M. VIRENS*, LINNÆUS.

Muscicapa virens, *Linn. Syst.* 327. — *Lath. Syn.* 2, 350. — *Id. Supp.* p. 174, No. 82. — *Catesb.* 1, 54 fig. 1. — Le gobe-mouche brun de la Caroline, *Buff.* 4, 543. — *Muscicapa acadica*, *Gmel. Syst.* 1, p. 947. — *Arct. Zool.* 387, No. 270. — *Peale's Museum*, No. 6660.

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AMERICAN REDSTART

MUSCICAPA RUTICILLA, LINNÆUS AND WILSON.

WILSON, Plate VI. Fig 6 adult male. — *Muscicapa ruticilla*, *Linn. Syst.* 1, 2: 6, 10. — *Gmel. Syst.* 1, 935. — *Motacilla flavicauda*, *Gmel. Syst.* 1, 997 (female.) — Le gobe-mouche d'Amerique, *Briss. Orn.* 2 383, 14. *Pl. enl.* 566, fig. 1, 2. — Small American Redstart, *Edw.* 80 *Id.* 257 (female.) — Yellow-tailed Warbler, *Arct. Zool.* 2, No. 301. *Id.* 2, No. 282. — *Lath. Syn.* 4, 427, 18. — *Arct. Zool.* 2, No. 301 (female.) — *Peale's Museum*, No. 6658. — Edinburgh College Museum.

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REDSFART

MUSCICAPA RUTICILLA.

WILSON, Plate XLV. Fig. 2, young bird. — *Edwards*, 257. — Yellow tail, *Arct. Zool.* 2, p. 466, No. 301.

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YELLOW-BREASTED CHAT

ICTERIA VIRIDIS, BONAPARTE — *PIPER POLYGLOTTA*, WILSON.

WILSON, Plate VI. Fig. 2 — *Muscicapa viridis*, *Gmel. Syst.* 1, 936 — La Merle vert de la Caroline, *Buffon*, 3, 396. — Chattering Flycatcher, *Arct. Zool.* 2, No. 266 — *Lath. Syn.* 3, 350, 48. — *Garrulus Australis*, *Bartram*, 290. — *Peale's Museum*, No. 6661.

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YELLOW-THROATED CHAT

VIREO FLAVIFRONS, VIEILL. — *MUSCICAPA SYLVICOLA*, WILSON.

WILSON, Plate VII. Fig. 3. — *Peale's Museum*, No. 6661. — Edinburgh College Museum.

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SOLITARY FLYCATCHER

VIREO SOLITARIUS, VIEILL. — *M. SOLITARIA*, WILSON.

WILSON, Plate XVII. Fig. 6

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WARBLING FLYCATCHER

VIREO GILVUS, BONAPARTE. — *M. MELODIA*, WILSON.

WILSON, Plate XIII. Fig. 2.

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RED-EYED FLYCATCHER

VIREO OLIVACEUS, BONAPARTE — *M. OLIVACEA*, WILSON.

WILSON, Plate XII. Fig. 2. — *Linn Syst.* 1, p. 327, 14. — Gobe-mouche de la Caroline et de la Jamaïque, *Buff.* 4, p. 539. *Edw.* t. 253. — *Catesby*, t. 54 — *Lath. Syn.* 3, p. 351, No. 52. — *Muscicapa sylvicola*, *Bartram*, p. 290. — *Peale's Museum*, No. 6673.

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WHITE-EYED FLYCATCHER

VIREO NOVEBORACENSIS, BONAPARTE. — *M. CANTATRIX*, WILS.

WILSON, Plate XVIII. Fig. 6. — *Muscicapa noveboracensis*, *Gmel. Syst.* 1, p. 947. — Hanging Flycatcher, *Lath. Syn. Supp.* p. 174. — *Arct. Zool.* p. 389 No. 274. — *Muscicapa cantatrix*, the little Domestic Flycatcher, or Green Wren, *Baird*, p. 290. — *Peale's Museum*, No. 6778.

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AMERICAN SHRIKE, OR BUTCHER BIRD.

LANIUS EXCUBITOR, WILSON. — *L. BOREALIS*, VIEILL.

WILSON, Plate v. Fig. 1. — La Pie grise che grise, *De Buffon*, 1, p. 296. *Pl. enl.* 445. — *Peale's Museum*, No. 604. — White Whisky John, *Phil. Trans.* v. 62, p. 386. — *Arct. Zool.* v. 2, No. 127. — Edinburgh College Museum.

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LOGGERHEAD SHRIKE

LANIUS CAROLINENSIS, WILS. — *L. LUDOVICIANUS*, LINN.

WILSON, Plate XVII. Fig. 5. — *Peale's Museum*, No. 557. — Edinburgh College Museum.

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MOCKING BIRD

TURDUS POLYGLOTTUS, LINNÆUS AND WILSON.

WILSON, Plate x. Fig. 1. — Minnie Thrush, *Lath. Syn.* 3, p. 40, No. 42. — *Arct. Zool.* 2, No. 194. — *Turdus Polyglottus*, *Linn. Syst.* 1, p. 293, No. 10. — Le grand Moqueur, *Briss. Orn.* 2, p. 266, 29. — *Buff. Orn.* 3, p. 325. *Pl. enl.* 558 fig. 1. — Singing-bird, Mocking-bird, or Nightingale, *Rau Syn.* p. 64, No. 5, p. 185, 31. — *Sloan Jam.* 2, 306, No. 54. — The Mock-bird, *Catesb. Car.* 1, pl. 27. — *Peale's Museum*, No. 5288. — Edinburgh College Museum.

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CAT BIRD

TURDUS LINDUS, WILSON. — *T. FELIFOX*, VIEILL.

WILSON, Plate XIV. Fig. 3. — *Muscicapa Carolinensis*, *Linn. Syst.* 328. — Le gobe-mouche brun de Virginie, *Briss.* 2, 365. — Cat bird, *Catesb.* 1, 66. — *Latham*, 2, 353. — Le moucheron de

Virginie, *Buff.* 4, 562. — Lucar lividus, apice nigra, the Cat bird, or Chicken bird, *Bartram*, p. 290. — *Peale's Museum*, No. 6770.

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WOOD THRUSH

TURDUS MERIDENS, WILSON. — *T. MUSTELINUS*, GMLIN.

WILSON, Plate II. Fig. 1. — *Ord. Passeres*.

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THE ROBIN

TURDUS MIGRATORIUS, LINNÆUS AND WILSON.

WILSON, Plate II. Fig. 2.

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RUSTY THRUSH.

TURDUS RUFUS, LINNÆUS AND WILSON.

WILSON, Plate XIV. Fig. 1. — Fox-coloured Thrush, *Catesby*, 1, 28 — *Turdus Rufus*, *Linn. Syst.* 293 — *Lath.* 3, 19 — La Grive de la Caroline, *Briss.* 2, 223 — Le Moqueur François, *De Buff.* 3, 323, *Pl. enl.* 645. — *Arct. Zool.* p. 35, No. 197. — *Peale's Museum*, No. 5285.

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HERMIT THRUSH

TURDUS SOLITARIUS, WILSON. — *T. MINOR*, GMELIN.

WILSON, Plate XIII. Fig. 2. — Little Thrush, *Catesby*, 1, 31. — *Edw.* 296. — Brown Thrush, *Arct. Zool.* 357, No. 199. — *Peale's Museum*, No. 3542.

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WILSON'S THRUSH — TAWNY THRUSH

TURDUS WILSONII, BONAPARTE. — *T. MUSTELINUS*, WILSON.

WILSON, Plate XIII. Fig. 3. — *Peale's Museum*, No. 5570.

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GOLDEN-CROWNED THRUSH

SYLVIA AUROCAPILLA, BONAP. — *T. AUROCAPILLUS*, WILSON.

WILSON, Plate XIV. Fig. 2 — *Edw.* 252. — *Lath.* 3, 21. — La figuer a tête d'or, *Briss.* 3, 304. — La Grivelette de St Domingue, *Buff.* 3, 317. *Pl. enl.* 398 — *Arct. Zool.* p. 39, No. 203. — *Turdus minimus*, vertice auro, the least Golden-crown Thrush, *Bartram*, p. 290. — *Peale's Museum*, No. 7122.

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WATER THRUSH.

SYLVIA NOBILORACENSIS, LATH. — *TURDUS AQUATICUS*, WILS.

WILSON, Plate XXIII. Fig. 5. — *Peale's Museum*, No. 6896.

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BLACK-THROATED GREEN WARBLER.

SYLVIA VIRIDIS, LATHAM AND WILSON.

WILSON, Plate XVII. Fig. 3. — *Motacilla virens*, *Gmel. Syst.* 1, p. 985. — Le Figuier à cravate none, *Buff.* 5, p. 298. — Black-throated Green Flycatcher, *Edw.* t. 300. — Green Warbler, *Arct. Zool.* 2, No. 297. — *Lath. Syn.* 4, p. 484, 108. — *Turton, Syst.* p. 607. — *Parus viridis gutturo nigro*, the Green Black-throated Flycatcher, *Bartram*, p. 292.

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YELLOW-RUMP WARBLER.

SYLVIA CORONATA, LATHAM AND WILSON.

WILSON, Plate XVII. Fig. 4 summer dress. — *Motacilla maculosa*, *Gmel. Syst.* 1, p. 984. — *Motacilla coronata*, *Linn. Syst.* 1, p. 332, No. 31. — Le Figuier à tête cendrée, *Buff.* 5, p. 291. — Le Figuier couronnée d'or, *Id.* 5 p. 312. — Yellow-rump Flycatcher, *Edw.* t. 255. — Golden-crowned Flycatcher, *Id.* t. 298. — Yellow-rump Warbler, *Arct. Zool.* 2, No. 288. — Golden-crowned Warbler, *Id.* 2 No. 294. — *Lath. Syn.* 4, p. 481, No. 104, *Id. Supp.* p. 182. *Id. Syn.* 4, p. 485, No. 11. — *Turt.* p. 599, *Id.* 606. — *Parus cedrus uropygio flavo*, the Yellow-Rump, *Bartram*, p. 292. — *Parus ameo vertice*, the Golden-crown Flycatcher, *Id.* 292. — *Peale's Museum*, No. 7134.

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YELLOW-RUMP WARBLER

SYLVIA CORONATA, LATHAM AND WILSON.

WILSON, Plate XLV. Fig. 3 winter plumage. — *Edwards*, 255. — *Arct. Zool.* 2, p. 400, No. 288.

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BLACK AND YELLOW WARBLER

SYLVIA MAGNOLIA, WILSON. — *S. MACULOSA*, LATHAM.

WILSON, Plate XXIII. Fig. 2, male. — *Peale's Museum*, No. 7783.

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BLACKBURNIAN WARBLER

SYLVIA BLACKBURNIA, LATHAM AND WILSON.

WILSON, Plate XXIII. Fig. 3. — *Latham*, 2, p. 461. No. 67 — *Peale's Museum*, No. 7060.

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CAPE MAY WARBLER.

SYLVIA MARITIMA, WILSON.

WILSON, Plate IIV. Fig. 3, male.

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CANADA LLYCATCHER

SYLVIA PARDALENSIS, BONAP. — *M. CANADENSIS*, WILSON.

WILSON, Plate XXVI. Fig. 2 male — *Linna. Syst.* 324. — *Arct. Zool.* p. 338, No. 273 — *Latham*, 2, 554. — *Peale's Museum*, No. 6969.

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HOODED LLYCATCHER

SYLVIA MITRATA, LATH. — *M. CUCULIATA*, WILSON.

WILSON, Plate XXVI. Fig. 3 male — Le gobe-mouche citrin, *Buff.* 4, 538, *Pl. enl.* 666. — Hooded Warbler, *Arct. Zool.* p. 400, No. 287. — *Lath.* 2, 462 — *Catesb.* 1, 60. — Mitred Warbler, *Turton*, 1, 601. — Hooded Warbler, *Ibid.* — *Peale's Museum*, No. 7062.

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YELLOW-THROAT WARBLER

SYLVIA PENNSILIS, LATH. — *S. FLAVICOLLIS*, WILSON.

WILSON, Plate XII. Fig. 6. — Yellow-throat Warbler, *Arct. Zool.* p. 400, No. 286. — *Catesb.* 1, 62 — *Lath.* 2, 437. — La Mesange grise à gorge jaune, *Buff.* 5, 454. — La gorge jaune de St Domingue, *Pl. enl.* 686, Fig. 1.

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BAY-BREASTED WARBLER.

SYLVIA CASTANEA, WILSON.

WILSON, Plate XIV. Fig. 4. — Parus peregrinus, the Little Chocolate-breasted Titmouse, *Burtrum*, p. 292. — *Peale's Museum*, No. 7311.

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CHESTNUT-SIDED WARBLER

SYLVIA PENNSYLVANICA, WILSON. — *S. ICTROCEPHALA*, LATH.

WILSON, Plate xiv. Fig. 5. — *Linn. Syst.* 333 — Red-throated Flycatcher, *Edw.* 301. — Bloody-side Warbler, *Turton, Syst.* 1, p. 596. — La figuier à poitrine rouge, *Buff* 5, 308. — *Briss. Add.* 105. — *Lath.* 2, 489. — *Arct. Zool.* p. 405, No. 298. — *Peale's Museum*, No. 7006.

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MOURNING WARBLER

SYLVIA PHILADELPHIA, WILSON.

WILSON, Plate xiv. Fig. 6.

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BLUE-EYED YELLOW WARBLER

SYLVIA CITRINFILA, WILSON. — *S. ÆSTIVA*, LATHAM.

WILSON, Plate xv. Fig. 5. — Yellow-poll Warbler, *Lath. Syn.* v. 2, No. 148. — *Arct. Zool.* p. 402, No. 292 — Le Figuier tacheté, *Buff Ois* 5, p. 285. — *Motacilla æstiva*, *Turt. Syst.* p. 615. — *Parus luteus*, Summer Yellow-bird, *Bartram*, p. 292. — *Peale's Museum*, No. 7266.

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BLACK THROATED BLUE WARBLER

SYLVIA CANADENSIS, LATHAM AND WILSON.

WILSON, Plate xv. Fig. 7. — *Motacilla Canadensis*, *Linn. Syst.* 336. — Le figuier bleu, *Buff* 5, 304, *Pl. enl.* 685, Fig. 2. — *Lath. Syn.* 2, p. 487, No. 113. — *Edw.* 252. — *Arct. Zool.* p. 399, No. 285. — *Peale's Museum*, No. 7222.

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CÆRULEAN WARBLER

SYLVIA CÆRULFA, WILSON. — *S. AZURFA*, STEPHEN.

WILSON, Plate xvii. Fig. 5. male. — *Peale's Museum*, No. 7309.

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MARYLAND YELLOW-THROAT

SYLVIA TRICHAS, LATHAM. — *S. MARYLANDICA*.

WILSON, Plate vi. Fig. 1. male. — *Turdus trichas*, *Linn. Syst.* 1, 293. — *Edw.* 257. — Yellow-breasted Warbler, *Arct. Zool.* 2, No. 283. *Id.* 284. — Le Figuet aux joyes noires, *De Buff.* 5, 292. — La Fauvette à poitrine jaune de la Louisiane, *Buff.* 5, 162. *Pl. enl.* 709, Fig. 2. — *Lath. Syn.* 4, 438, 32. — *Peale's Museum*, No. 7282.

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MARYLAND YELLOW-THROAT

SYLVIA TRICHAS, LATHAM. — *S. MARYLANDICA*, WILSON.

WILSON, Pl. xviii. Fig. 4. female. — *Peale's Museum*, No. 7785.

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GREEN BLACK-CAPT FLACATCHER

SYLVIA WILSONII, BONAPARTE. — *MUSCICAPA PUSILLA*, WILSON.

WILSON, Plate xxvi. Fig. 4.

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BLUE MOUNTAIN WARBLER.

SYLVIA TIGRINA, LATHAM. — *S. MONTANA*, WILSON.

WILSON, Plate xiv. Fig. 2. male.

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HELMLOCK WARBLER

SYLVIA PARUS, WILSON.

WILSON, Plate xiv. Fig. 3. male.

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BLACK-POLL WARBLER

SYLVIA STRIATA, LATHAM AND WILSON.

WILSON, Plate xxx. Fig. 3. male. — *Lath.* 2, 460. — *Arct. Zool.* 401. — *Tarleton*, 600 — *Peale's Museum*, No. 7054.

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BLACK-POLL WARBLER

SYLVIA STRIATA, LATHAM AND WILSON.

WILSON, Plate liv. Fig. 4. female. — *Amer. Orn.* vol. 4. p. 40.

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KENTUCKY WARBLER.

SYLVIA FORMOSA, WILSON.WILSON, Plate xxv. Fig. 3. — *Peale's Museum*, No. 7786.

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PRAIRIE WARBLER

SYLVIA MINUTA, WILSON. — *S. DISCOLOR*, VIEILL.WILSON, Plate xxv. Fig. 4. — *Peale's Museum*, No. 7784.

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BLUE-GREEN WARBLER.

SYLVIA RARA, WILSON.WILSON, Plate xxvii. Fig. 2. — *Peale's Museum*, No. 7788.

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PINE-CREEPING WARBLER.

SYLVIA PINUS, WILSON AND LATHAM.WILSON, Plate xix. Fig. 4. — Pine Creeper, *Catesby*, 1, 61. — *Peale's Museum*, No. 7312.

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SMALL BLUE GRAY FLA CATCHER

SYLVIA CERULEA, LATHAM. — *MUSCICAPA CERULEA*, WILSON.WILSON, Plate xviii. Fig. 5. — *Motacilla caerulea*, *Turt. Syst.* 1, p. 612 — Blue Flycatcher, *Edw.* pl. 302. — *Regulus giseus*, the Little Blush Gray Wren, *Burtram*, p. 291. — Le Figuier gris de fer, *Buff'* 5, p. 709. — Caerulean Warbler, *Arct. Zool.* 2, No. 299. — *Lath. Syn.* 4, p. 490, No. 127. — *Peale's Museum*, No. 6829.

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BLACK AND WHITE CREEPER

SYLVIA VARIA, LATHAM. — *CIRRHIA MACULATA*, WILSON.WILSON, Plate xix. Fig. 3. — *Edwards*, pl. 300. — White Poll Warbler, *Arct. Zool.* 402, No. 293. — Le Figuier varié, *Buff'* 5, 305. — *Lath.* 2, 488. — *Turt.* 1, p. 603. — *Peale's Museum*, No. 7092.

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YELLOW RED-POLL WARBLER.

SYLVIA PETECHIA, LATHAM AND WILSON.

WILSON, Plate xxviii. Fig. 4, adult male in spring. — Red-headed Warbler, *Turton*, 1, 605. — *Peale's Museum*, No. 7124.

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BLUE YELLOW-BACK WARBLER.

SYLVIA PUSILLA, WILSON. — *S. AMERICANA*, LATHAM.

WILSON, Plate xxxviii. Fig. 3. — *Parus Americanus*, *Linn. Syst.* 341. — Finch Creeper, *Catesb.* 1, 64. — *Latham*, 2, 558. — Creeping Titmouse, *Arct. Zool.* 423, No 326. — *Parus varius*, Various coloured little Finch Creeper, *Bartram*, p. 292. — *Peale's Museum*, No. 6910.

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CONNECTICUT WARBLER.

SYLVIA AGILIS, WILSON.

WILSON, Plate xxxix. Fig. 4.

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PINE SWAMP WARBLER.

SYLVIA PUSILLA, WILSON. — *SYLVIA SPHAGNOSA*, BONAPARTE.

WILSON, Plate xliii. Fig. 4.

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AUTUMNAL WARBLER.

SYLVIA AUTUMNALIS, WILSON.

WILSON, Plate xxiii. Fig. 4.

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SMALL-HEADED FLYCATCHER.

SYLVIA MINUTA, BONAPARTE. — *MUSCICAPA MINUTA*, WILSON.

WILSON, Plate L. Fig. 5.

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PROTHONOTARY WARBLER.

SYLVIA PROTONOTARIUS, LATHAM AND WILSON.

WILSON, Plate xxiv. Fig. 3. — *Arct. Zool.* p. 410. — *Buffon*, 5, 316. — *Latham*, 2, 494. *Pl. enl.* 704. — *Peale's Museum*, No. 7020.

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WORM-EATING WARBLER.

SYLVIA VERMIVORA, LATHAM AND WILSON.

WILSON, Plate xxiv. Fig. 4. — *Arct. Zool.* p. 406, No. 300. — *Edwards*, 305. — *Latham*, 2, 499. — Le Demi-fin mangeur de vers, *Buffon*, 5, 325. — *Peale's Museum*, No. 6848.

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BLUE-WINGED YELLOW WARBLER

SYLVIA SOLITARIA, WILSON.

WILSON, Plate xv. Fig. 4. — *Parus aureus alis ceruleis*, *Bartram*, p. 292. — *Edw.* pl. 277, upper figure. — Pine Warbler, *Arct. Zool.* p. 412, No. 318. — *Peale's Museum*, No. 7307.

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GOLDEN-WINGED WARBLER

SYLVIA CHRYSOPTERA, LATHAM AND WILSON.

WILSON, Plate xv. Fig. 6, male. — *Edw.* 299. — Le Figuer aux ailes dorées, *Buff.* 5, 311. — *Lath.* 2, 492. — *Arct. Zool.* 403, No. 295. — *Ib.* No. 296. — *Motacilla chrysoptera*, *Turt. Syst.* 1, 597. — *Mot. flavifrons*, Yellow-fronted W. *Id.* 601. — *Parus alis aureis*, *Bartram*, p. 292. — *Peale's Museum*, No. 7010.

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TENNESEE WARBLER

SYLVIA PEREGRINA, WILSON.

WILSON, Plate xxv. Fig. 2. — *Peale's Museum*, No. 7787.

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NASHVILLE WARBLER.

SYLVIA RUBRICAPILLA, WILSON.

WILSON, Plate xxvii. Fig. 3. — *Peale's Museum*, No. 7789.

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BLUEBIRD

SAXICOLA SIALIS, BONAPARTE. — SYLVIA SIALIS, WILSON.

WILSON, Plate iii. Fig. 3, adult male. — Le Rouge gorge bleu, *De Buffon*, 5, 212. *Pl. enl.* 390. — Blue Warbler, *Latham*, 2, 446. — *Catesby*, 1, 47. — *Motacilla sialis*, *Linn. Syst.* 336. — *Peale's Museum*, No. 7188. — Edinburgh College Museum.

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BROWN LARK

ANTHUS SPINOLETTA, BONAPARTE. — *ALAUDA RUFa*, WILSON.

WILSON, Plate XLII. Fig. 4. — Red Lark, *Edu.* 297. — *Arct. Zool.* No. 279. — *Latham*, 2, 376. — L'Alouette aux joues brunes de Pennsylvanie, *Buff.* 5, 58. — *Peale's Museum*, No. 5138.

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RUBY-CROWNED WREN.

REGULUS CALENDULA, STEPHENS. — *SYLVIA CALENDULA*, WILS.

WILSON, Plate v. Fig. 3. — Le Roitelet Rubis, *De Buff.* 5, 373. — *Edu.* 254. — *Lath. Syn.* 2, 511. — *Arct. Zool.* 320. — *Peale's Museum*, No. 7244.

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GOLDEN-CRESTED WREN

REGULUS CRISTATUS, RAY. — *SYLVIA REGULUS*, WILSON.

WILSON, Plate VIII. Fig. 2. — Motacilla regulus, *Linn. Syst.* 1, 338, 48. — *Lath. Syn.* 4, 508, 145. — *Edu.* 254. — *Peale's Museum*, No. 7246. — Edinburgh College Museum.

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HOUSE WREN

TROGLODYTES EDON, VIEILL. — *SYLVIA DOMESTICA*, WILSON.

WILSON, Plate VIII. Fig. 3. — Motacilla domestica (Regulus rufus,) *Bartram*, 291. — *Peale's Museum*, No. 7283.

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WINTER WREN

TROGLODYTES EUROPEUS, LEACH. — *SYLVIA TROGLODYTES*.

WILSON, Plate VIII. Fig. 6. — Motacilla Troglodytes? *Linn.* — *Peale's Museum*, No. 7284. — Edinburgh College Museum.

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GREAT CAROLINA WREN.

TROGLODYTES LUDOVICIANUS, BONAPARTE.

CERTHIA CAROLINIANA, WILSON.

WILSON, Plate XII. Fig. 5. — Le Roitelet de la Louisiane, *Pl. enl.* 730, fig. 1. — *Lath. Syn.* 7, p. 507, var. B. — Le Troglodytes de la Louisiane, *Buff. Ois.* 5, p. 361. — Motacilla Caroliniana

(*regulus magnus*,) *Bartram*, p. 291. — *Peale's Museum*, No. 7248.

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MARSH WREN.

TROGLODYTES PALUSTRIS, BONAP. — *CERTHIA PALUSTRIS*, WILS.

WILSON, Plate XII. Fig. 4. — *Lath. Syn. Suppl.* p. 244. — *Motacilla palustris* (*regulus minor*,) *Bartram*, p. 29. — *Peale's Museum*, No. 7282.

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BROWN CREEPER.

CERTHIA FAMILIARIS, LINNÆUS AND WILSON.

WILSON, Plate VIII. Fig. 1. — Little Brown variegated Creeper, *Bartram*, 289. — *Peale's Museum*, No. 2434. — Edinburgh College Museum.

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WHITE-BREASTED BLACK-CAPT NUTHATCH, OR
CAROLINA NUTHATCH

SITTA CAROLINENSIS, BRISSON, LINNÆUS, AND WILSON.

WILSON, Plate II. Fig. 3. — *Catesby*, 1, 22, fig. 2. — *Latham*, 1, 650, B. — *Briss.* 3, 22. — *Sitta Carolinensis*, *Turton*.

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RED-BELLIED BLACK-CAPT NUTHATCH.

SITTA VARIA, WILSON. — *SITTA CANADENSIS*, LINNÆUS.

WILSON, Plate II. Fig. 4. — *Sitta Varia*, *Bartram*, p. 289. — *Sitta Canadensis*, *Turton*. — Small Nuthatch, *Latham*, 1, 651.

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BROWN-HEADED NUTHATCH.

SITTA PUSILLA, LATHAM AND WILSON.

WILSON, Plate xv. Fig. 2. — Small Nuthatch, *Catesby*, *Car.* 1, 22, upper figure. — La Petite Sittelle à tête brune, *Buff.* 5. 474. — *Peale's Museum*, No. 2040. *Briss.* 3, 958. — *Lath.* 1, 651, C.

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HUMMING BIRD.

TROCHILUS COLUBRIS, LINNÆUS AND WILSON.

WILSON, Plate x. Fig. 3, male. — Fig. 4, female. — *Trochilus colubris*, *Linn. Syst.* 1, p. 191, No. 12. — L'Oiseau mouche à

gorge rouge de la Caroline, *Briss. Orn.* 3, p. 716, No. 13, t. 38, fig. 6. — Le Rubis, *Buff. Ois.* 6, p. 13. — Humming bird, *Catesb. Car.* 1, 65. — Red-throated Humming bird, *Edw.* 1, 38, male and female. — *Lath. Syn.* 2, 769, No. 35. — *Peale's Museum*, No. 2520. — Edinburgh College Museum.

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BLACK-CAPT TITMOUSE.

PARUS ATRICAPILLUS, LINNÆUS AND WILSON.

WILSON, Plate VIII. Fig. 4. — *Parus atricapillus*, *Linn. Syst.* 1, 341, 6. — *Gmel. Syst.* 1, 1008. — La Mesange à tête noire de Canada, *Buff.* 5, 408. — Canada Titmouse, *Arct. Zool.* 2, No. 328. — *Lath. Syn.* 4, 542, 9. — *Peale's Museum*, No. 7380.

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CRESTED TITMOUSE

PARUS BICOLOR, LINNÆUS AND WILSON.

WILSON, Plate VIII. Fig. 5. — *Parus bicolor*, *Linn. Syst.* 1, 544, 1. — La Mesange huppé de la Caroline, *Buff.* 5, 451. — Toupet Titmouse, *Arct. Zool.* 1, No. 324. — *Lath. Syn.* 4, 544, 11. — *Peale's Museum*, No. 7364.

CLIII. — Page 219.

SHORE LARK.

ALAUDA ALPESTRIS, LINNÆUS AND WILSON.

WILSON, Plate v. Fig. 4. — *Alauda alpestris*, *Linn. Syst.* 289. — *Lath. Syn.* 2, 385. — *Peale's Museum*, No. 5190. — L'Alouette de Virginie, *De Buff.* 5, 55. — *Catesb.* 1, 32. — Edinburgh College Museum.

CLIV. — Page 221.

SNOW BUNTING

EMBERIZA NIVALIS, LINNÆUS AND WILSON.

WILSON, Plate XXI. Fig. 2. — *Linn. Syst.* 308. — *Arct. Zool.* p. 55, No. 222. — Tawny Bunting, *Br. Zool.* No. 121. — L'Ortolan de Neige, *Buff.* 4, 329, *Pl. enl.* 497. — *Peale's Museum*, 5900. — Edinburgh College Museum.

CLV. — Page 226.

SCARLET TANAGER.

TANAGRA RUBRA, WILSON.

WILSON, Plate XI. Fig. 3, male. — Fig. 4, female. — *Tanagra rubra*, *Linn. Syst.* 1, p. 314, 3. — Cardinal de Canada, *Briss.*

Orn. 3, p. 48, pl. 2, fig. 5. — *Lath.* 2, p. 217, No. 3. — Scarlet Sparrow, *Edw.* pl. 343. — Canada Tanager, and Olive Tanager, *Arct. Zool.* p. 369, No. 237, 238. — *Peale's Museum*, No. 6128. — Edinburgh College Museum.

CLVI. — Page 231.

SUMMER RED BIRD

TANAGRA ÆSTIVA, GMELIN AND WILSON.

WILSON, Plate vi. Fig. 3, male. — Fig. 4, female. — Tanagra Mississippensis, *Lath. Ind. Orn.* 1, 421, 5. — Mexican Tanager, *Lath. Syn.* 3, 219, 5, *B.* — Tanagra variegata, *Ind. Orn.* 1, 421, 6. — Tanagra æstiva, *Ind. Orn.* 1, 422, 7. — Muscicapa rubra, *Linn. Syst.* 1, 326, 8. — *Buff.* 6, 252. *Pl. enl.* 741. — *Catesby, Car.* 1, 56. — Merula flammula, Sandhill Red-bird, *Bartram*, 299. — *Peale's Museum*, No. 6134.

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LOUISIANA TANAGER.

TANAGRA LUDOVICIANA, WILSON.

WILSON, Plate xx. Fig. 1. — *Peale's Museum*, No. 6236.

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INDIGO BIRD

FRINGILLA CYANEA, WILSON.

WILSON, Plate vi Fig. 5. — Tanagra cyanea, *Linn. Syst.* 1, 315. — Le Ministre, *Buff.* 4, 86. — Indigo Bunting, *Arct. Zool.* 2, No. 235. — *Lath. Syn.* 3, 205, 63. — Blue Linnet, *Edw.* 273. — *Peale's Museum*, No. 6002.

CLIX. — Page 239.

PAINTED BUNTING

FRINGILLA CIRIS, WILSON AND TEMMINCK.

WILSON, Plate xiv. Fig. 1, male. — Fig. 2, female. — *Linn. Syst.* 313. — Painted Finch, *Catesb.* 1, 44. — *Edw.* 130, 173. — *Arct. Zool.* p. 362, No. 226. — Le Verdier de la Louisiane, dit vulgairement le Pape, *Briss.* 3, 200. App. 74. — *Buffon*, 4, 76. *Pl. enl.* 159. — *Lath.* 2, 206. — Linaria ciris, the Painted Finch, or Nonpareil, *Bartram*, p. 291. — *Peale's Museum*, No. 6062, and 6063.

CLX. — Page 242.

BLACK-THROATED BUNTING

FRINGILLA AMERICANA, BONAPARTE.

WILSON, Plate III. Fig. 2. — Calandra Pratensis, the May Bird, *Bartram*, p. 291. — *Peale's Museum*, No. 5952. — *Arct. Zool.* 228. — *Emberiza Americana*, *Ind. Orn.* p. 44.

CLXI. — Page 244.

WHITE-CROWNED BUNTING.

FRINGILLA LEUCOPHRYS, TEM. — *EMBERIZA LEUCOPHRYS*, WILS.

WILSON, Plate XXXI. Fig. 4. — *Turton, Syst.* p. 536. — *Peale's Museum*, No. 6587.

CLXII. — Page 245.

BAY-WINGED BUNTING

FRINGILLA GRAMINEA, Gmel. — *EMBERIZA GRAMINEA*, WILS.

WILSON, Plate XXXI. Fig. 5. — Glass Finch, *Arct. Zool.* No. 253. — *Latham*, 3, 273. — *Turt. Syst.* 1, p. 565.

CLXIII. — Page 246.

SWAMP SPARROW

FRINGILLA PALUSTRIS, WILSON.

WILSON, Plate XVII. Fig. 1, adult male — *Passer palustris*, *Bartram*, p. 291. — *Peale's Museum*, No. 6569.

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WHITE-THROATED SPARROW

FRINGILLA ALBICOLLIS, WILSON.

WILSON, Plate XXIV. Fig. 2. — *Fringilla fusca*, *Bartram*, p. 291. — *Lath.* 2, 272. — *Edw.* 304. — *Arct. Zool.* p. 373, No. 248. — *Peale's Museum*, No. 6486.

CLXV. — Page 249.

SAVANNAH SPARROW

FRINGILLA SAVANNA, WILSON.

WILSON, Plate XXII. Fig. 3, female. — *Peale's Museum*, No. 6584.

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SAVANNAH FINCH.

FRINGILLA SAVANNA, WILSON.

WILSON, Plate xxxiv. Fig. 4, male. — *Peale's Museum*, No. 6583.

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FIELD SPARROW.

FRINGILLA PUSILLA.

WILSON, Plate xvi. Fig. 2. — *Passer agrestis*, *Bartram*, p. 291. — *Peale's Museum*, No. 6560.

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TREE SPARROW

FRINGILLA ARBOREA, WILS. — *FRINGILLA CANADENSIS*, LATH.

WILSON, Plate xvi. Fig. 3. — Le Soulciet, *Buffon*, 3, 500. — Moineau de Canada, *Brisson*, 3, 101. *Pl. enl.* 223. — *Latham*, 2, 252. — *Edw.* 269. — *Arct. Zool.* p. 373, No. 246. — *Peale's Museum*, No. 6575. — Edinburgh College Museum.

CLXIX. — Page 253.

SONG SPARROW.

FRINGILLA MELODIA, WILSON.

WILSON, Plate xvi. Fig. 4. — Fasciated Finch? *Arct. Zool.* p. 375, No. 252. — *Peale's Museum*, No. 6573.

CLXX. — Page 255.

CHIPPING SPARROW.

FRINGILLA SOCIALIS, WILSON.

WILSON, Plate xvi. Fig. 5. — *Passer domesticus*, the Little House Sparrow, or Chipping Bird, *Bartram*, p. 291. — *Peale's Museum*, No. 6571.

CLXXI. — Page 256.

SNOW BIRD.

FRINGILLA NIVALIS, WILSON.

WILSON, Plate xvi. Fig. 6. — *Fringilla Hudsonia*, *Turton*, *Syst.* 1, 568. — *Emberiza hyemalis*, *Id.* 531. — *Latham*, 1, 66. — *Catesb.* 1, 36. — *Arct. Zool.* p. 359, No. 223. — *Passer nivalis*, *Bartram*, p. 291. — *Peale's Museum*, No. 6532. — Edinburgh College Museum.

CLXXII. — Page 259.

YELLOW-WINGED SPARROW

FRINGILLA PASSERINA, WILSON.WILSON, Plate xxiv. Fig. 5. — *Peale's Museum*, No. 6585.

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SHARP-TAILED SPARROW

FRINGILLA CAUDACUTA, WILSON.WILSON, Plate xxxiv. Fig. 3. — *Peale's Museum*, No. 6442.

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SEA-SIDE FINCH.

FRINGILLA MARITIMA, WILSON.

WILSON, Plate xxxiv. Fig. 2.

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YELLOW BIRD, OR GOLDFINCH.

FRINGILLA TRISTIS, LINNÆUS AND WILSON.

WILSON, Plate i. Fig. 2, adult male, in spring dress. — Edinburgh College Museum.

CLXXVI. — Page 265.

PINE FINCH.

FRINGILLA PINUS, WILSON.WILSON, Plate xvii. Fig. 1, in winter plumage. — *Peale's Museum*, No. 6577.

CLXXVII. — Page 267.

LESSER RED-POLL

FRINGILLA LINARIA, LINNÆUS AND WILSON.WILSON, Plate xxx. Fig. 4, male. — *Lath.* 2, 305. — *Arct. Zool.* 379. — Le Sizeren, *Buff.* 4, 216. *Pl. enl.* 151, 2. — *Peale's Museum*, No. 6579. — *Turton's Linn.* 1, p. 562. — *Bewick's British Birds*, 1, p. 191. — *Brit. Zool.* No. 132. *Arct. Zool.* No. 262. — Le Cabaret? *Buff. Ois.* 7, 109. *Pl. enl.* No. 485. — *Belon*, av. 356. — *Albin*, 3, p. 31. — *Phil. Trans.* 62, 405. — *Grasiska, Faun. Suec.* No. 241. — Edinburgh College Museum.

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FOX-COLOURED SPARROW.

FRINGILLA ILIACA, MEREM. — *F. RUFA*, (*FERRUGINEA*), WILS.

WILSON, Plate xxii. Fig. 4. — Rusty Bunting, *Arct. Zool.* p. 364, No. 231. *Ib.* 233. — Ferruginous Finch, *Ib.* 375, No. 251. — *Fringilla rufa*, *Bartram*, p. 291. — *Peale's Museum*, No. 6092. — Edinburgh College Museum.

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TOWHE BUNTING

FRINGILLA ERYTHROPHTHALMA, LINNÆUS.

EMBERIZA ERYTHROPHTHALMA, WILSON.

WILSON, Plate x. Fig. 5 — *Fringilla erythrophthalma*, *Linn. Syst.* p. 318, 6. — Le Pinson de la Caroline, *Briss. Orn.* 3, p. 169, 44. — *Buff. Ois.* 4, p. 141. — *Lath.* 2, p. 199, No. 43. — *Catesb. Car.* 1, pl. 34. — *Peale's Museum*, No. 5970.

CLXXX. — Page 273.

CARDINAL GROSBEEK

FRINGILLA CARDINALIS, BONAP. — *LOXIA CARDINALIS*, WILSON.

WILSON, Plate ii. Fig. 1, male. — Fig. 2, female. — *Linn. Syst.* 1, p. 300, No. 5. — Le Grosbec de Virginie, *Briss. Orn.* 3, p. 255, No. 17. — *Buff.* 3, p. 458, pl. 28. *Pl. enl.* 37. — *Lath. Syn.* 2, p. 118, No. 13. — Cardinal, *Brown's Jam.* p. 647 — *Peale's Museum*, No. 5668. — Edinburgh College Museum.

CLXXXI. — Page 277.

ROSE-BREASTED GROSBEEK

FRINGILLA LUDOVICIANA, BONAPARTE. — *LOXIA ROSEA*, WILSON.

WILSON, Plate xvii. Fig. 2, male. — *Loxia Ludoviciana*, *Turton's Syst.* — Red-breasted Grosbeak, *Arct. Zool.* p. 350, No. 212. — Red-breasted Finch, *Id.* 372, No. 245. — Le Rose gorge, *Buff.* 3, 460. — Grosbec de la Louisiane, *Pl. enl.* 153, fig. 2. — *Lath.* 2, 126. — *Peale's Museum*, No. 5806, male ; 5807, female ; 5808, A, male of one year old.

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BLUE GROSBEEK.

FRINGILLA CÆRULEA, BONAPARTE. — *LOXIA CÆRULEA*, WILSON.

WILSON, Plate xxiv. Fig. 6. — *Linn. Syst.* 304. — *Latham*, 3, 116. — *Arct. Zool.* p. 351, No. 217. — *Catesby*, 1, 39. — *Buffon*, 3, 454. *Pl. enl.* 154. — *Peale's Museum*, No. 5826.

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PURPLE FINCH.

FRINGILLA PURPUREA, WILSON AND GMELIN.

WILSON, Plate vii. Fig. 4, male, summer dress. — Plate xlii. Fig. 3, male, winter plumage. — *Fringilla purpurea*, *Gmel. Syst.* 1, 923. — *Bouvereul violet de la Caroline*, *Buff.* 4, 395. — Purple Finch, *Arct. Zool.* 2, No. 258. — *Cates.* 1, 41. — *Lath. Syn.* 3, 275, 39. — Cinnamon-headed Finch, *Arct. Zool.* 2, No. 257. — *Lath. Syn.* 3, 271, 29. — *Gmel. Syst.* 1, 864. — *Fringilla rosea*, *Pallas*, 3, 699, 26. — Hemp-bird, *Bartram*, 291. *Fringilla purpurea*, *Id.* 291. — *Peale's Museum*, No. 6504.

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PINE GROSBEEK

PYRRHULA ENUCLEATOR, TEM. — *LOXIA ENUCLEATOR*, WILSON.

WILSON, Plate v. Fig. 2, young male. — *Loxia Enucleator*, *Linn. Syst.* 1, p. 299, 3. — Le Dur-bec, ou Gros-bec de Canada, *Buffon*, 3, p. 457. *Pl. enl.* 135, 1. — *Edw.* 123, 124. — *Lath. Syn.* 3, p. 111, 5. — *Peale's Museum*, No. 664. — Edinburgh College Museum.

CLXXXV. — Page 286.

AMERICAN CROSSBILL.

LOXIA CURVIROSTRA, LINN. — *CURVIROSTRA AMERICANA*, WILS.

WILSON, Plate xxxi. Fig. 3, young male. — *Peale's Museum*, No. 5640. — Edinburgh College Museum.

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WHITE-WINGED CROSSBILL

LOXIA LEUCOPTERA, GMEL. — *CURVIROSTRA LEUCOPTERA*, WILS.

WILSON, Plate xxxi. Fig. 3, young male. — *Turton, Syst.* 1, p. 515.

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CAROLINA PIGEON, OR TURTLE DOVE

COLUMBA CAROLINENSIS, WILSON.

WILSON, Plate xliii. Fig. 1. — *Linn. Syst.* 286. — *Catesb. Car.* 1, 24. — *Buff.* 2, 557. *Pl. enl.* 175. — La Tourterelle de la Caroline, *Brisson*, 1, 110. — *Peale's Museum*, No. 5088 — *Turton*, 479. — *Arct. Zool.* 2, No. 188. — Edinburgh College Museum.

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MIGRATORY PIGEON

COLUMBA MIGRATORIA, LINNÆUS AND WILSON.

WILSON, Plate XLIV. Fig. 2. — *Catesby*, 1, 23. — *Linn. Syst.* 285. — *Turton*, 479. — *Arct. Zool.* p. 322, No. 187. — *Brisson*, 1, 100. — *Buffon*, 2, 527. — *Peale's Museum*, No. 5084. — Edinburgh College Museum.

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GROUND DOVE.

COLUMBA PASSERINA, LINNÆUS AND WILSON.

WILSON, Plate XVII. Fig. 1, male — Fig. 3, female. — *Linn. Syst.* 285. — *Sloan. Jam.* 2, 305. — Le Cocotzin, Fernandez, 24. — *Buffon*, 2, 559. *Pl. enl.* 243. — La petite Tourtelle, *Brisson*, 2, 113. — *Turt. Syst.* 478. — *Columba minuta*, *Ibid.* p. 479. — *Arct. Zool.* p. 328, No. 191. — *Catesb.* 1, 26. — Edinburgh College Museum.

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QUAIL, OR PARTRIDGE.

PERDRIX VIRGINIANA, LATHAM AND WILSON.

WILSON, Plate XLVII. Fig. 2, male. — *Arct. Zool.* 318, No. 185. — *Catesby, App.* p. 12. — Virginian Quail, *Turt. Syst.* p. 460. — Maryland Q. *Ibid.* — Le Perdrix d'Amerique, *Briss.* 1, 231. — *Buff.* 2, 447. — Edinburgh College Museum.

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RUFFLED GROUSE.

TETRAO UMBELLUS, LINNÆUS AND WILSON.

WILSON, Plate XLIX. — *Arct. Zool.* p. 301, No. 179. — Ruffed Heathcock, or Grouse, *Edw.* 248. — La Gelinote huppée de Pennsylvanie, *Briss.* 1, 214. *Pl. enl.* 104. — *Buff.* 2, 281. — *Phil. Trans.* 62, 393. — *Turt. Syst.* 454. — *Peale's Museum*, No. 4702. — Edinburgh College Museum.

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PINNATED GROUSE

TETRAO CUPIDO, LINNÆUS AND WILSON.

WILSON, Plate XXVII. Fig. 1, male. — *Linn. Syst.* 1, p. 274, 5. — *Lath.* 2, p. 740. — *Arct. Zool.* — La Gelinote huppée d'Amerique, *Briss. Orn.* 1, p. 212, 10. — *Urogalus minor*, fuscus cervice, plumis alas imitantibus donatâ, *Cates. Car. App.* pl. 1. — *Tetrao lagopus*, the Mountain Cock, or Grouse, *Bartram*, p. 290. — Heath-hen, Prairie hen, Barren-hen. — *Peale's Museum*, No. 4700, male; 4701, female.

SYNONYMS TO VOLUME THIRD.

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RINGED PLOVER.

CHARADRIUS MELODUS, BONAP. — *CHARADRIUS HIATICULA*, WILS.

WILSON, Plate xxxvii. Fig. 3, adult. — *Lath. Syn.* 5, p. 201. 8. — *Arct. Zool.* 2, No. 401. — Petit Pluvier à collier, *Buff.* 8, p. 90-6. *Pl. enl.* 921. — *Pluvialis Torquata minor*, *Briss.* 5, p. 63, 8, t. 5, f. 2. — *Turt. Syst.* p. 411, 2. — *Peale's Museum*, No. 4150. — Edinburgh College Museum.

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RING PLOVER.

CHARADRIUS SEMIPALMATUS, BONAP. — *TRINGA HIATICULA*, WILS.

WILSON, Plate LIX. Fig. 3. — *Arct. Zool.* p. 485. No. 401. — Le Petit Pluvier à collier, *Buff.* 8, 90. — *Bewick*, 1, 326. — *Peale's Museum*, No. 4150.

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WILSON'S PLOVER.

CHARADRIUS WILSONIUS, ORD.

WILSON, Plate LXXIII. Fig. 5. — *Peale's Museum*, No. 4159, male ; 4160, female.

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KILDEER PLOVER.

CHARADRIUS VOCIFERUS, LINNÆUS AND WILSON.

WILSON, Plate LIX. Fig. 6. — *Arct. Zool.* No. 400. — *Catesb.* 1, 71. — Le Kildir, *Buff.* 8, 96. — *Peale's Museum*, No. 4174. — Edinburgh College Museum.

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GOLDEN PLOVER

CHARADRIUS FLUVIALIS, LINNÆUS AND WILSON.

WILSON, Plate LIX. Fig. 5. — *Arct. Zool.* p. 493, No. 399. — *Bewick*, 1, 322. — Le Pluvier doré, *Buff.* 8, 81. *Pl. enl.* 904. — *Peale's Museum*, No. 4198. — Edinburgh College Museum.

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BLACK-BELLIED PLOVER.

CHARADRIUS HELVETICUS, BON. — *CHARADRIUS APRICARIUS*, WILS.

WILSON, Plate LVII. Fig. 4. — Alwagrim Plover, *Arct. Zool.* p. 483, No. 398. — Le Pluvier doré à gorge noire, *Buff.* 8, 85. — *Peale's Museum*, No. 4196. — Edinburgh College Museum.

CXC IX. — Page 15.

TURNSTONE.

STREPSILAS INTERPRES, ILLIG. — *TRINGA INTERPRES*, WILS.

WILSON, Plate LVII. Fig. 1. — Hebridal Sandpiper, *Arct. Zool.* p. 472, No. 382. — Le Tourne-pierre, *Buff.* 7, 130, *Pl. enl.* 130. — *Bewick*, 2, p. 119, 121. — *Catesby*, 1, 72. — *Peale's Museum*, No. 4044. — Edinburgh College Museum.

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PIED OYSTER-CATCHER

HÆMATOPUS OSTRALEGUS, LINNÆUS AND WILSON.

WILSON, Plate LXIV. Fig. 2. — *Arct. Zool.* No. 406. — *Lath. Syn.* 3, p. 219. — *Catesby*, 1, 85. — *Bewick*, 2, 23. — *Peale's Museum*, No. 4258. — Edinburgh College Museum.

CCI. — Page 23.

WHOOPIING CRANE.

GRUS AMERICANA, BONAPARTE. — *ARDEA AMERICANA*, WILSON.

WILSON, Plate LXIV. Fig. 3. — *Arct. Zool.* No. 399. — *Catesb.* 1, 75. — *Lath.* 3, p. 42. — La Grue d'Amerique, *Briss.* 5, p. 382. — *Pl. enl.* 889. — *Peale's Museum*, No. 3704.

CCII. — Page 26.

GREAT HERON.

ARDEA HERODIAS, LINNÆUS AND WILSON.

WILSON, Plate LXV. Fig. 2. — Le Heron hupé de Virginie, *Briss.* 5, p. 416, 10. — Le Grand Heron d'Amerique, *Buff.* 7,

p. 385. — Larger crested Heron, *Catesb. App.* pl. 10, fig. 1. — *Lath. Syn.* 3, p. 85. — *Arct. Zool.* No. 341. — *Peale's Museum*, No. 3629.

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GREAT WHITE HERON.

ARDEA ALBA, LINNÆUS. — *ARDEA EGRETTE*, WILSON.

WILSON, Plate LXI. Fig. 4. — *Peale's Museum*, No. 3754 ; young, 3755.

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SNOWY HERON.

ARDEA CANDIDISSIMA, GMELIN AND WILSON.

WILSON, Plate LXII. Fig. 4. — *Turt. Syst.* p. 380 — *Lath. Syn.* v. 3, p. 92, No. 61. — *Peale's Museum*, No. 3785.

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LOUISIANA HERON

ARDEA LUDOVICIANA, WILSON.

WILSON, Plate LXIV. Fig. 1. — *Peale's Museum*, No. 3750. — Edinburgh College Museum.

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NIGHT HERON, OR QUA BIRD

ARDEA NYCTICORAX, LINNÆUS AND WILSON.

WILSON, Plate LXI. Fig. 2, adult — Fig. 3, young. — *Arct. Zool.* No. 356. — Le Bihoreau, *Buff.* 7, 435, 439, tab. 22. *Pl. enl.* 758, 759, 899 — *Lath. Syn.* v. 3, p. 52. No. 13, — p. 53, Young, called there the Female. — *Peale's Museum*, No. 3728, young, No. 3729. — Edinburgh College Museum.

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YELLOW-CROWNED HERON

ARDEA VIOLACEA, LINNÆUS AND WILSON.

WILSON, Plate LXV. Fig. 1. — *Linn. Syst.* 1, p. 238. 16. — *Lath. Syn.* 3, p. 80. — Le Crabier de Bahama, *Brisson*, 5, p. 481, 41. — Crested Bittern, *Catesby*, 1, pl. 79. — Le Crabier gris de fer, *Buff.* 7, p. 399. — *Arct. Zool.* No. 352 — *Peale's Museum*, No. 3738.

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BLUE CRANE, OR HERON.

ARDEA CERULÆA, LINNÆUS AND WILSON.

WILSON, Plate LXII. Fig. 3. — *Arct. Zool.* No. 351. — *Catesby*, 1, 76. — Le Crabier bleu, *Buff.* 7, 398. — *Sloan. Jam.* 2, 315. — *Lath. Syn.* v. 3, p. 78, No. 45. — p. 79, var. A. — *Ardea cærulescens*, *Turt. Syst.* p. 379. — *Peale's Museum*, No. 3782. — Edinburgh College Museum.

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AMERICAN BITTERN.

ARDEA MINOR, WILSON.

WILSON, Plate LXV. Fig. 3. — Le Butor de la Baye d'Hudson, *Brissou*, 5, p. 449, 25. — *Buffon*, 7, p. 430. — *Edwards*, 136, var. A. — *Lath. Syn.* 3, p. 58. — *Peale's Museum*, No. 3727.

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GREEN HERON

ARDEA VIRESCENS, LINNÆUS AND WILSON.

WILSON, Plate LXI. Fig. 1. — *Arct. Zool.* No. 349. — *Catesb.* 1, 80. — Le Crabier vert, *Buffon*, 7, 404. — *Lath. Syn.* v. 3, p. 68, No. 30. — *Peale's Museum*, No. 3797. — Edinburgh College Museum.

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LEAST BITTERN.

ARDEA EXILIS, GMELIN AND WILSON.

WILSON, Plate LXV. Fig. 4. — *Lath. Syn.* v. 3, p. 66, No. 28. — *Peale's Museum*, No. 3814.

CCXII. — Page 54.

WOOD IBIS

TANTALUS LOCULATOR, LINNÆUS AND WILSON.

WILSON, Plate LXVI. Fig. 1. — Le grand Courli d'Amerique, *Briss.* 5, p. 358, 8. — *Coumeca*, *Buff.* 7, p. 276. *Pl. enl.* 868. — *Catesb.* 1, 81. — *Arct. Zool.* No. 360. — *Lath. Syn.* 3, p. 104. — *Peale's Museum*, No. 3862. — Edinburgh College Museum.

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SCARLET IBIS.

IBIS RUBRA, VIFILL. — *TANTALUS RUBER*, WILSON.

WILSON, Plate LXVI. Fig. 2. — Le Courli rouge du Bresil, *Brisson*, 5, p. 344, 12, Fig. 1, 2. — *Buffon*, 8, p. 35. — Red Curlew, *Catesb.* 1, 84. — *Lath.* 3, p. 106. — *Arct. Zool.* No. 361. — *Peale's Museum*, No. 3864. — Edinburgh College Museum.

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WHITE IBIS

IBIS ALBA, VIFILL. — *TANTALUS ALBUS*, WILSON.

WILSON, Plate LXVI. Fig. 3. — Le Courli blanc du Bresil, *Briss.* 5, p. 339, 10. — *Buff.* 8, p. 41. *Pl. enl.* 915. — White Curlew, *Catesb.* 1, pl. 82. — *Lath. Syn.* 3, p. 111, No. 9. — *Arct. Zool.* No. 363.

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LONG-BILLED CURLEW.

NUMENIUS LONGIROSTRIS, WILSON.

WILSON, Plate LXIV. Fig. 4. — *Peale's Museum*, No. 3910.

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ESQUIMAUX CURLEW.

NUMENIUS HUDSONICUS, LATH. — *SCOLOPAX BOREALIS*, WILS.

WILSON, Plate LVI. Fig. 1. — *Arct. Zool.* p. 461, No. 364. — *Lath.* 3. — *Turt. Syst.* p. 392. — *Peale's Museum*, No. 4003.

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SEMIPALMATED SANDPIPER.

TRINGA SEMIPALMATA, WILSON.

WILSON, Plate LXIII. Fig. 4. — *Peale's Museum*, No. 4023.

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RED-BACKED SANDPIPER.

TRINGA ALPINA, LINNÆUS AND WILSON.

WILSON, Plate LVI. Fig. 2. — *Arct. Zool.* p. 476, No. 391. — *Bewick*, 2, p. 113. — *La Biunnette*, *Buff.* 7, 493. — *Peale's Museum*, No. 4094. — Edinburgh College Museum.

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ASH-COLOURED SANDPIPER

TRINGA CINEREA, WILSON.

WILSON, Plate LVII. Fig. 2. — *Arct. Zool.* p. 474, No. 386. — *Bewick*, 2, p. 102. — *Peale's Museum*, No. 4060. — Edinburgh College Museum.

CCXX. — Page 68.

RED-BREASTED SANDPIPER

TRINGA RUFA, WILSON.

WILSON, Plate LVII. Fig. 5. — *Peale's Museum*, No. 4050. — Edinburgh College Museum.

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THE PURRE

TRINGA CINCLUS.

WILSON, Plate LVII. Fig. 3. — *Linn. Syst.* 251. — *Arct. Zool.* p. 475, No. 390. — *Bewick*, 2, p. 115. — *L'Alouette de mer*, *Buff.* 7, 548. — *Peale's Museum*, No. 4126. — Edinburgh College Museum.

CCXXII. — Page 71.

LITTLE SANDPIPER

TRINGA PUSILLA, WILSON.

WILSON, Plate XXXVII. Fig. 4. — *Lath. Syn.* 5, p. 184, 32. — *Arct. Zool.* 2, No. 397. — *Cinclus dominicensis minor*, *Briss.* 5, p. 222, 13, t. 25, f. 2. — *Turt. Syst.* p. 410. — *Peale's Museum*, No. 4138. — Edinburgh College Museum.

CCXXIII. — Page 72.

SANDERLING PLOVER

FRINGA ARENARIA, LINNÆUS. — *CHARADRIUS CALIDRIS*, WILSON.

WILSON, Plate IIX. Fig. 4. winter dress. — *Linn. Syst.* 255. — *Arct. Zool.* p. 486, No. 403. — *Le Sanderling*, *Buff.* 7, 532. — *Bewick*, 2, 19. — *Peale's Museum*, No. 4204.

CCXXIV. — Page 74.

RUDDY PLOVER

CHARADRIUS RUBIDUS, WILSON.

WILSON, Plate LXIII. Fig. 3. summer dress. — *Arct. Zool.* No. 404. — *Lath. Syn.* 5, 3, p. 195, No. 2. — *Turt. Syst.* p. 415.

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LONG-LEGGED PLOVER.

HIMANTOPUS NIGRICOLLIS, VIFILL.*RECURVIROSTRA HIMANTOPUS*, WILSON.

WILSON, Plate LVIII. Fig. 2. — Long-legged Plover, *Arct. Zool.* p. 487, No. 405. — *Turton*, p. 416. — *Bewick*, 2, 21. — *L'Echasse*, *Buff.* 8, 114. *Pl. enl.* 878. — *Peale's Museum*, No. 4210. — Edinburgh College Museum.

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SEMIPALMATED SNIPE

TOTANUS SEMIPALMATUS, TEM. — *SCOLOPAX SEMIPALMATA*, WILSON.

WILSON, Plate LVI. Fig. 3. — *Arct. Zool.* p. 469, No. 380. — *Peale's Museum*, No. 3942.

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YELLOW-SHANKS SNIPE.

TOTANUS FLAVIPES, VIFILL. — *SCOLOPAX FLAVIPES*, WILSON.

WILSON, Plate LVIII. Fig. 4. — *Arct. Zool.* p. 463, No. 878. — *Turt. Syst.* 395. — *Peale's Museum*, No. 3938.

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TELL-TALE GODWIT, OR SNIPE

TOTANUS MELANOLEUCUS, VIEILL. — *SCOLOPAX VOCIFERUS*, WILSON.

WILSON, Plate LVIII. Fig. 5. — Stone Snipe, *Arct. Zool.* p. 468, No. 376. — *Turt. Syst.* p. 396. — *Peale's Museum*, No. 3940.

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BARTRAM'S SANDPIPER.

TOTANUS BARTRAMUS, TEM. — *TRINGIA BARTRAMIA*, WILSON.

WILSON, Plate LIX. Fig. 2. — *Peale's Museum*, No. 4040.

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SOLITARY SANDPIPER

TOTANUS CHLOROPYGIUS, VIEILL. — *TRINGA SOLITARIA*, WILSON.

WILSON, Plate LVIII. Fig. 3. — *Peale's Museum*, No. 7763.

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SPOTTED SANDPIPER.

TOTANUS MACULARIUS, TEMMINCK. — *TRINGA MACULARIA*, WILSON.

WILSON, Plate LIX. Fig. 1. — *Arct. Zool.* p. 473, No. 385. — La Grive d'eau, *Buff.* 8, 140. — *Edw.* 277. — *Peale's Museum*, No. 4056. — Edinburgh College Museum.

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GREAT MARBLED GODWIT

LIMOSA FEDOA, VIFILL. — *SCOLOPAX FEDOA*, WILSON.

WILSON, Plate LVI. Fig. 4, female. — *Arct. Zool.* p. 465, No. 371. — La Barge rousse de Baie de Hudson, *Buff.* 7, 507. — *Peale's Museum*, No. 4019.

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RED-BREADED SNIPE

SCOLOPAX GRISEA, GMELIN. — *SCOLOPAX NOVEBORACENSIS*, WILSON.

WILSON, Plate XLVII. Fig. 1. — *Arct. Zool.* p. 464, No. 368. — *Peale's Museum*, No. 3932.

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SNIPE.

SCOLOPAX BREHMII, KAUP. — *SCOLOPAX GALLINAGO*, WILSON.

WILSON, Plate LVIII. Fig. 1.

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AMERICAN WOODCOCK.

SCOLOPAX MINOR, GMELIN AND WILSON.

WILSON, Plate XLVIII. Fig. 2. — *Arct. Zool.* p. 463, No. 365. — *Turt. Syst.* 396.

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CLAPPER RAIL

RALLUS CREPITANS, LINNÆUS AND WILSON.

WILSON, Plate LXII. Fig. 2. — *Arct. Zool.* No. 407. — *Turt. Syst.* p. 430. — *Lath. Syn.* v. 3, p. 229, No. 2. — *Peale's Museum*, No. 4400.

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VIRGINIAN RAIL.

RALLUS VIRGINIANUS, LINNÆUS AND WILSON.

WILSON, Plate LXII. Fig. 1. — *Arct. Zool.* No. 408. — *Edu.* 279. — *Lath. Syn.* v. 3, p. 228, No. 1. var. A. — *Peale's Museum*, No. 4426. — Edinburgh College Museum.

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CAROLINA RAIL.

RALLUS CAROLINUS, LINNÆUS AND WILSON.

WILSON, Plate XLVIII. Fig. 1. — *Soree, Catesb.* 1, 70. — *Arct. Zool.* p. 491, No. 409. — Little American Water Hen, *Edw.* 144. — Le Râle de Virginie, *Buff.* 8, 165. — Edinburgh College Museum.

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MARTINICO GALLINULE.

GALLINULA MARTINICA, LATHAM.*GALLINULA PORPHYRIO*, WILSON.

WILSON, Plate LXXIII. Fig. 2. — *Gallinula Martinica*, *Lath. Ind. Orn.* p. 769, 9. *Gen. Syn.* 3, p. 255, 7, pl. 88. — *Fulica Martinica*, *Linn. Syst.* ed. 12, 1, p. 259, 7. — *Fulica Martinicensis*, *Gmel. Syst.* p. 700, 7. — La petite Poule-Sultane, *Briss. Orn.* 5, p. 526, pl. 42, fig. 2. — *Buff. Ois.* 8, p. 206. — La Favourite de Cayenne, *Pl. enl.* No. 897; young. — *Peale's Museum*, No. 4294. — Edinburgh College Museum.

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CINEREUS COOT.

FULICA AMERICANA, GMELIN. — *FULICA ATRA*, WILSON.

WILSON, Plate LXXIII. Fig. 1. — *Fulica Americana*, *Gmel. Syst.* 1, p. 704, 23. — *Lath. Ind. Orn.* p. 779, 5. — Cinereous Coot, *Gen. Syn.* 3, p. 279. — *Peale's Museum*, No. 4322. — Edinburgh College Museum.

CCXLI. — Page 128.

BROWN PHALAROPE.

PHALAROPUS FULICARNIS, BONAPARTE.*PHALAROPUS HYPERBOREUS*, WILSON.

WILSON, Plate LXXIII. Fig. 3. — *Tringa lobata*, *Linn. Syst.* ed. 10, tom. 1, p. 148, 5. *T. hyperborea*, *Id.* ed. 12, tom. 1, p. 249, 9. — *Tringa lobata*, *Gmel. Syst.* 1, p. 674, 6. *T. fusca*, *Id.*

p. 675, 33. *T. hyperborea*, *Id.* No. 9. — *Phalaropus cinereus*, *Briss. Orn.* 6, p. 15. *P. fuscus*, *Id.* p. 18. — Le Phalarope cendré, *Buff. Ois.* 8, p. 224. *Pl. enl.* 766. — Coot-footed Tringa, *Edwards*, pl. 46. Cock Coot-footed Tringa, *Id.* pl. 143. — Red Phalarope, *Penn. Brit. Zool.* No. 219. — Brown Phalarope, *Arct. Zool.* No. 414. — *Phalaropus hyperboreus*, *Lath. Ind. Orn.* p. 775, 1. *P. fuscus*, *Id.* p. 776, 4. — Red Phalarope, *Gen. Syn.* 3, p. 270, 1. *Id.* p. 272, var. A. Brown Phalarope, *Id.* p. 274, 4. — Red Phalarope, *Montagu, Orn. Dic. Id. Sup. and Appendix.* — *Phalaropus hyperboreus*, *Tem. Man. d'Orn.* p. 709. — Le Lobipède à hausse-col, *Cuv. Reg. An.* 1, p. 495.

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GRAY PHALAROPE.

PHALAROPUS FULICARIUS, WILSON.

WILSON, Plate LXXIII. Fig. 4. — Tringa Fulicaria, *Linn. Syst.* ed. 10, tom. 1, p. 148, 6. — Tringa glacialis, *Gmel. Syst.* 1, p. 675, 2. *T. hyperborea*, var. B. *Id.* p. 676. — Le Phalarope, *Briss. Orn.* 6, p. 12, No. 1. *Phalaropus rutescens*, *Id.* p. 20. — *Phalaropus lobatus*, *Lath. Ind. Orn.* p. 776, 2. *P. glacialis*, *Id.* No. 3. — Red Phalarope, fem. *Gen. Syn.* 3, p. 271. Gray Phalarope, *Id.* p. 272, 2. Plain Phalarope, *Id.* p. 273, 3. — Gray Phalarope, *Penn. British Zool.* No. 218. *Arct. Zool.* No. 412. Red Phalarope, *Id.* No. 413. Plain Phalarope, *Id.* No. 415. — Red Coot-footed Tringa, *Edw. pl.* 142. Gray Coot-footed Tringa, *Id. Gleanings*, pl. 308. — Le Phalarope rouge, *Buffon, Ois.* 8, p. 225. — Le Phalarope à festons dentelés, *Id.* p. 226. — Gray Phalarope, *Montagu, Orn. Dic. and Appendix to Sup.* — *Bewick*, 2, p. 132. Le Phalarope gris, *Cuv. Règ. An.* 1, p. 492. — Le Phalarope rouge, *Id. ibid.* — *Phalaropus platyrhynchus*, *Temm. Man. d'Orn.* p. 712. — *Peale's Museum*, No. 4088.

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AMERICAN AVOSET.

RECURVIROSTRA AMERICANA, LINNÆUS AND WILSON.

WILSON, Plate LXXIII. Fig. 2. — *Arct. Zool.* No. 421. — *Lath. Syn.* v. 3, p. 295, No. 2. — *Peale's Museum*, No. 4250. — Edinburgh College Museum.

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RED FLAMINGO.

PHENICOPTERUS RUBER, LINNÆUS.

WILSON, Plate LXXVI. Fig. 4. — Le Flammant, *Briss.* 6, p. 533, pl. 47, fig. 1. — *Buff.* 8, p. 475, pl. 39. *Pl. enl.* 63. — *Lath. Syn.* 3, p. 299. — *Arct. Zool.* No. 422. — *Catesby*, 1, pl. 73, 74.

— *Peale's Museum*, No. 3545, bird of the first year; No. 3546, bird of the second year. — Edinburgh College Museum.

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ROSEATE SPOONBILL

PLATALEA AJAJA, LINNÆUS AND WILSON.

WILSON, Plate LXIII. Fig. 1. — *Arct. Zool.* No. 338. — *Lath. Syn.* v. 3, p. 16, No. 2. — La Spatule couleur de Rose, *Briss. Orn.* 5, p. 356, 2, pl. 30. *Pl. enl.* p. 116. — *Buff.* 7, 456. — *Peale's Museum*, No. 3553. — Edinburgh College Museum.

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BLACK SKIMMER, OR SHEERWATER

RHYNCHOPS NIGRA, LINNÆUS AND WILSON.

WILSON, Plate LX. Fig. 4. — *Arct. Zool.* No. 445. — *Cutesb.* 1, 90. — Le Bec en Ciseaux, *Buff.* 8, 454, tab. 36. — *Peale's Museum*, No. 3530. — Edinburgh College Museum.

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MARSH TERN.

STERNA ARANEA, WILSON.

WILSON, Plate LXXII. Fig. 6. — *Peale's Museum*, No. 3521

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GREAT TERN

STERNA HIRUNDO, LINNÆUS.

WILSON, Plate LX. Fig. 1. — *Arct. Zool.* p. 524, No. 448. — Le pierre garin, ou grande Houdelle de mer, *Buff.* 8, 331. *Pl. enl.* 987. — *Bewick*, 2, 181. — *Peale's Museum*, No. 3485. — Edinburgh College Museum.

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LESSER TERN.

STERNA MINUTA, LINNÆUS.

WILSON, Plate LX. Fig. 2. — *Arct. Zool.* No. 449. — La petite Houdelle de mer, *Buff.* 8, 337. *Pl. enl.* 996. — *Bewick*, 2, 182. — *Peale's Museum*, No. 3505. — Edinburgh College Museum.

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SHORT-TAILED TERN.

STERNA NIGRA, LINNÆUS. — *STERNA PLUMBEA*, WILSON.

WILSON, Plate LX. Fig. 3. — *Peale's Museum*, No. 3519.

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SOOTY TERN.

STERNA FULIGINOSA, GMFLIN AND WILSON.

WILSON, Plate LXXII. Fig. 7. — Le Hirondelle de Mer à grande envergure, *Buff.* 8, p. 345. — Egg-bird, *Forst. Voy.* p. 113. — Noddy, *Damp. Voy.* 3, p. 142. — *Arct. Zool.* No. 447. — *Lath. Syn.* 3, p. 352. — *Peale's Museum*, No. 3459. — Edinburgh College Museum.

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LAUGHING GULL.

LARUS ATRICILLA, LINNÆUS. — *LARUS RIDIBUNDUS*, WILSON.

WILSON, Plate LXXIV. Fig. 4. — *Larus atricilla*, *Linn. Syst.* ed. 10, tom. 1, p. 136, 5. — *Gmel. Syst.* 1, p. 600, 8. — *Ind. Orn.* p. 813, 4. — Laughing Gull, *Catesby*, 1, pl. 89. — *Lath. Gen. Syn.* 3, p. 383, 12. — *Arct. Zool.* No. 454. — La Mouette rieuse, *Briss.* 6, p. 192, 13, pl. 18, Fig. 1. — Mouette à capuchon plombé, *Tinn. Man. d'Orn.* p. 779. — *Peale's Museum*, No. 3881. — Edinburgh College Museum.

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STORMY PETREL.

PROCELLARIA PELAGICA, LINNÆUS.

WILSON, Plate LX. Fig. 6. — *Arct. Zool.* No. 464. — Le Petrel, ou l'Oiseau tempête, *Pl. enl.* 993. — *Bewick*, 2, 223. — *Peale's Museum*, No. 3034. — Edinburgh College Museum.

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SNOW GOOSE

ANAS HYPERBOREA, GMELIN AND WILSON.

WILSON, Plate LXXVIII. Fig. 5, male. — L'Oye de Neige, *Briss.* 6, p. 288, 10. — White Biant, *Lawson's Carolina*, p. 157. — *Arct. Zool.* No. 477. — *Phil. Trans.* 62, p. 413. — *Lath. Syn.* 3, p. 445. — *Peale's Museum*, No. 2635. — Edinburgh College Museum.

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YOUNG OF THE SNOW GOOSE.

ANAS HYPERBOREA.

WILSON, Plate LXIX. Fig. 5. — Bean Goose? *Lath. Syn.* 3, p. 404. — White-fronted Goose? *Ibid.* 3, p. 463. — *Arct. Zool.* No. 476. — Blue-winged Goose? *Lath. Syn.* p. 3, 469. — *Peale's Museum*, No. 2636.

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CANADA GOOSE

ANAS CANADENSIS, LINNÆUS AND WILSON.

WILSON, Plate LXVII. Fig. 4. — L'Oye sauvage de Canada, *Brisson*, 6, p. 272, 4. pl. 26. — L'Oie à cravate, *Buff.* 9, p. 82. — *Edw.* pl. 151. — *Arct. Zool.* No. 471. — *Catesby*, 1, pl. 92. — *Lath. Syn.* 3, p. 450. — *Peale's Museum*, No. 2704. — Edinburgh College Museum.

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THE BRANT.

ANAS BERNICLA, LINNÆUS AND WILSON.

WILSON, Plate LXXII. Fig. 1. — Le Ciavant, *Brisson*, 6, p. 304, 16, pl. 31. — *Buff.* 9, p. 87. — *Bewick*, 2, p. 277. — *Lath. Syn.* 3, p. 467. — *Arct. Zool.* No. 478. — *Peale's Museum*, No. 2704. — Edinburgh College Museum.

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SHOVELLER.

ANAS CLYPEATA, LINNÆUS AND WILSON.

WILSON, Plate LXVII. Fig. 7. — Le Souchet, *Briss.* 6, p. 329, 6, pl. 32, Fig. 1. — *Buff.* 9, 191. *Pl. enl.* 971. — *Arct. Zool.* No. 485. — *Catesby*, 1, pl. 96, female. — *Lath. Syn.* 3, p. 509. — *Peale's Museum*, No. 2734. — Edinburgh College Museum.

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THE MALLARD

ANAS BOSCHAS, LINNÆUS.

WILSON, Plate LXX. Fig. 7. — *Lath. Syn.* 3, p. 489. — *Bewick*, 2, p. 291. — Le Canard Sauvage, *Briss.* 6, p. 318, 4. — *Buff.* 9, p. 115, pl. 7, 8. — *Peale's Museum*, No. 2864. — Edinburgh College Museum.

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THE GADWALL

ANAS STREPERA, LINNÆUS AND WILSON.

WILSON, Plate LXXI. Fig. 1. — Le Chipeau, *Briss.* 6, p. 339, 8, pl. 33, Fig. 1. — *Buffon*, 9, 187. *Pl. enl.* 958. — *Arct. Zool.* p. 575. — *Latham, Syn.* 3, p. 515. — *Peale's Museum*, No. 2750. — Edinburgh College Museum.

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PINTAIL DUCK

ANAS ACUTA, LINNÆUS AND WILSON.

WILSON, Plate LXVIII. Fig. 3. — Le Canard à longue queue, *Briss.* 6, p. 369, 16. pl. 34, fig. 1, 2. — *Buff.* 9, p. 199, pl. 13. *Pl. enl.* 954. — *Arct. Zool.* No. 500. — *Lath. Syn.* 3, p. 526. — *Peale's Museum*, No. 2806. — Edinburgh College Museum.

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AMERICAN WIDGEON

ANAS AMERICANA, GMELIN AND WILSON.

WILSON, Plate LXIX. Fig. 4. — Le Canard Jensen, *Pl. enl.* 955. — *Buff.* 9, p. 174. — *Arct. Zool.* No. 502. — *Lath. Syn.* 3, p. 520. — *Peale's Museum*, No. 2798.

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DUSKY DUCK

ANAS OBSCURA, GMELIN AND WILSON.

WILSON, Plate LXXII. Fig. 5. — *Arct. Zool.* No. 469. *Lath. Syn.* 3, p. 545. — *Peale's Museum*, No. 2880.

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SUMMER DUCK, OR WOOD DUCK

ANAS SPONSA, LINNÆUS AND WILSON.

WILSON, Plate LXX. Fig. 3. — Le Canard d'Été, *Briss.* 6, p. 351, 11. pl. 32, fig. 2. — Le beau Canard huppé, *Buff.* 9, p. 245. *Pl. enl.* 980, 981. — Summer Duck, *Catesby*, 1, pl. 97. — *Edw.* pl. 101. — *Arct. Zool.* No. 943. — *Lath. Syn.* 3, p. 546. — *Peale's Museum*, No. 2872. — Edinburgh College Museum.

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BLUE-WINGED TEAL

ANAS DISCORS, LINNÆUS AND WILSON.

WILSON, Plate LXVIII. Fig. 4. — Le Sarcelle d'Amerique, *Briss.* 6, p. 452, 35. — *Buff.* 9, p. 279. — *Pl. enl.* 966. — *Catesby*, 1, pl. 100. — White-faced Duck, *Lath. Syn.* 3, p. 502. — *Arct. Zool.* No. 503. — *Peale's Museum*, No. 2846. — Edinburgh College Museum.

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GREEN-WINGED TEAL.

ANAS CRESCA, LINNÆUS AND WILSON.

WILSON, Plate LXX. Fig. 4. — *Lath. Syn.* 3, p. 554. — *Bewick's Br. Birds*, v. 2, p. 338. — *Peale's Museum*, No. 2832. — Edinburgh College Museum.

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EIDER DUCK

ANAS MOLLISSIMA, LINNÆUS AND WILSON.

WILSON, Plate LXXI. Fig. 2, male. — L'Oye à duvet, ou l'Exler, *Briss.* 6, p. 294, pl. 29, 50. — *Buff.* 9, p. 103, pl. 6. *Pl. enl.* 209. — Great Black and White Duck, *Edw.* pl. 98. — *Bewick*, 2, p. 279. — *Arct. Zool.* No. 480. — *Lath. Syn.* 3, p. 470. — *Peale's Museum*, No. 2706. — Edinburgh College Museum.

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FEMALE EIDER DUCK

ANAS MOLLISSIMA, LINNÆUS AND WILSON.

WILSON, Plate LXXI. Fig. 3. — *Peale's Museum*, No. 2707. — Edinburgh College Museum.

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SCOTER DUCK

ANAS NIGRA, LINNÆUS AND WILSON.

WILSON, Plate LXXII. Fig. 2. — Le Macreuse, *Briss.* 6, p. 420, pl. 38, fig. 2. — *Buff.* 9, p. 234, pl. 16. *Pl. enl.* 978. — *Bewick*, 2, p. 288. — *Arct. Zool.* No. 484. — *Lath. Syn.* 3, p. 480. — *Peale's Museum*, No. 2658. — Edinburgh College Museum.

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VELVET DUCK

ANAS FUSCA, LINNÆUS AND WILSON.

WILSON, Plate LXXII. Fig. 3. — Le grande Macreuse, *Briss.* 6, p. 423, 29. — *Buff.* 9, p. 242. *Pl. enl.* 956. — *Arct. Zool.* No. 482. — *Bewick*, 2, p. 286. — *Lath. Syn.* 3, p. 482. — *Peale's Museum*, No. 2658, female. — Edinburgh College Museum.

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BLACK, OR SURF DUCK.

ANAS PERSPICILLATA, LINNÆUS AND WILSON.

WILSON, Plate LXVII. Fig. 1. — Le grande Macreuse de la Baye de Hudson, *Briss.* 6, p. 425, 30. — Le Macreuse à large bec, *Buff.* 9, p. 244. *Pl. enl.* 995. — *Edw.* pl. 155. — *Lath. Syn.* 3, p. 479. — *Phil. Trans.* 62, p. 417. — *Peale's Museum*, No. 2788.

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RUDDY DUCK.

ANAS RUBIDUS, WILSON.

WILSON, Plate LXXI. Fig. 5, male. — *Peale's Museum*, No. 2808.

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FEMALE RUDDY DUCK.

ANAS RUBIDUS, WILSON.

WILSON, Plate LXXI. Fig. 6. — *Peale's Museum*, No. 2809.

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PIED DUCK

ANAS LABRADORA, GMELIN AND WILSON.

WILSON, Plate LXXIX. Fig. 6. — *Arct. Zool.* No. 488. — *Lath. Syn.* 3, p. 497. — *Peale's Museum*, No. 2858.

CCLXXV. — Page 219.

CANVASS-BACK DUCK

ANAS VALISINERIA, WILSON.

WILSON, Plate LXXI. Fig. 5. — *Peale's Museum*, No. 2816.

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RED-HEADED DUCK

ANAS FERINA, LINNÆUS AND WILSON.

WILSON, Plate LXX. Fig. 6. — *Peale's Museum*, No. 2710. — Edinburgh College Museum.

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SCAUP DUCK.

ANAS MARILA, LINNÆUS AND WILSON.

WILSON, Plate LXIX. Fig. 3. — Le petit Morillon rayé, *Briss.* 6, p. 416, 26, A. — *Arct. Zool.* No. 498. — *Lath. Syn.* 3, p. 500. — *Peale's Museum*, No. 2668. — Edinburgh College Museum.

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TUFTED DUCK.

ANAS RUFITORQUES, BONAPARTE. — *ANAS FULIGULA*, WILSON.

WILSON, Plate LXVII. Fig. 5. — *Arct. Zool.* p. 573. — Le petit Morillon, *Briss.* 6, 411, 26, pl. 37, 1 — *Buff.* 9, p. 227, 231, pl. 15. — *Lath. Syn.* 3, p. 540. — *Peale's Museum*, No. 2904. — Edinburgh College Museum.

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GOLDEN EYE.

ANAS CLANGULA, LINNÆUS AND WILSON.

WILSON, Plate LXVII. Fig. 6. — Le Garrat, *Briss.* 6, p. 416, 27, pl. 37, fig. 2. — *Buff.* 9, p. 222. — *Arct. Zool.* No. 486. — *Lath. Syn.* 3, p. 535. — *Peale's Museum*, No. 2921. — Edinburgh College Museum.

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BUFFEL-HEADED DUCK.

ANAS ALBEOLA, LINNÆUS AND WILSON.

WILSON, Plate LXVII. Fig. 2. male. — Fig. 3. female. — La Sarcelle de la Louisiane, *Briss.* 6, p. 461, pl. 41, fig. 1. — Le petit Canard à grosse tête, *Buff.* 9, p. 249. — *Edw.* pl. 100. — *Arct. Zool.* No. 487. — *Catesby*, 1, 95. — *Lath. Syn.* 3, p. 533. — *Peale's Museum*, No. 2730.

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LONG-TAILED DUCK

ANAS GLACIALIS, LINNÆUS AND WILSON.

WILSON, Plate LXX. Fig. 1. male. — La Canard à longue queue de Terre Neuve, *Briss.* 6, p. 382, 18. — *Buff.* 9, p. 202. *Pl. enl.* 1008. — *Edw.* pl. 280. — *Arct. Zool.* No. 501. — *Lath. Syn.* 3, p. 528. — *Peale's Museum*, No. 2810. — Edinburgh College Museum.

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FEMALE LONG-TAILED DUCK

ANAS GLACIALIS, LINNÆUS AND WILSON.

WILSON, Plate LXX. Fig. 2. — *Anas hyemalis*, *Linn. Syst.* 202, 29. — *Lath. Syn.* 3, p. 529. — *Peale's Museum*, No. 2811. — Edinburgh College Museum.

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HARLEQUIN DUCK

ANAS HISTRIONICA, LINNÆUS AND WILSON.

WILSON, Plate LXII. Fig. 4. — Le Canard à Collier de Terre Neuve, *Briss.* 6, p. 362, 14. — *Buff.* 9, p. 250. *Pl. enl.* 798. — *Arct. Zool.* No. 490. — *Lath. Syn.* 3, p. 484. — Edinburgh College Museum.

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GOOSANDER

MERGUS MERGANSER, LINNÆUS AND WILSON.

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FEMALE GOOSANDER

MERGUS MERGANSER, LINNÆUS AND WILSON.

WILSON, Plate LXVIII. Fig. 2. — *Mergus castor*, *Gmel. Syst.* 1, p. 545, et var. — *Lath. Ind. Orn.* p. 829, No. 2. — *Dun Divers*, *Gen. Syn.* 3, p. 420, 421. — *Bewick*, 2, p. 231. — *Montagu, Orn. Dic. Sup.* — *Briss.* 6, p. 236. — Le Harle femelle, *Buff.* 8, p. 272. *Pl. enl.* 953. — *Peale's Museum*, No. 2933. — Edinburgh College Museum.

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MERGUS CUCULLATUS, LINNÆUS AND WILSON.

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MERGUS SERRATOR, LINNÆUS AND WILSON.

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MERGUS ALBELLUS, LINNÆUS AND WILSON.

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PLOTUS ANHINGA, LINNÆUS. — *PLOTUS MELANOGASTER*, WILSON.

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var. B. — *Colymbus colubrinus*, Snake Bird, *Bartram*, p. 132, 295. — *Peale's Museum*, No. 3188, male. — Edinburgh College Museum.

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PLOTUS MELANOGASTER, WILSON.

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GREAT NORTHERN DIVER, OR LOON.

COLYMBUS GLACIALIS, LINNÆUS AND WILSON.

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URIA ALLE, TEMMINCK. — *ALCA ALLE*, WILSON.

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END OF VOLUME THIRD.

EDINBURGH:

Printed by ANDREW SHORTREED, Thistle Lane

AMERICAN ORNITHOLOGY.

AMERICAN ORNITHOLOGY;
OR THE
NATURAL HISTORY
OF
THE BIRDS OF THE UNITED STATES.

BY ALEXANDER WILSON,
AND CHARLES LUCIAN BONAPARTE.

EDITED BY
ROBERT JAMESON, Esq. F.R.S.E. & L. F.L.S. M.W.S.
REGIUS PROFESSOR OF NATURAL HISTORY IN THE UNIVERSITY
OF EDINBURGH, &c.

IN FOUR VOLUMES.

VOL. IV.

EDINBURGH:

PRINTED FOR CONSTABLE AND CO. EDINBURGH,
AND HURST, CHANCE, AND CO. LONDON

1831.

EDINBURGH :
Printed by ANDREW SHORTREED, Thistle-Lane.

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IN this the only European edition of Wilson's American Birds, the whole work (in the original edition in nine volumes quarto—here in three volumes) is, for the *first time*, regularly arranged; so that it is now equally accessible to the general reader and the ornithologist. The interesting biographical Memoir by Mr Hetherington, an esteemed writer, prefixed to the first volume, is the best account of Wilson hitherto published. The fourth volume contains the valuable American Ornithology of Prince Charles Lucian Bonaparte ;

also occasional notes by the Editor: and many beautiful sketches of the feathered creation from the pen of Audubon, another great American self-taught naturalist; and illustrations from an important work, *Northern Zoology*, by Richardson and Swainson, at present in the press, conclude the volume.

R. JAMESON.

EDINBURGH COLLEGE MUSEUM,

August 1, 1831.

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BONAPARTE'S
AMERICAN ORNITHOLOGY.

ORDER I.

ACCIPITRES, LINNÆUS.

VOL. IV.

GENUS I.

FALCO, LINNÆUS.

1 *FALCO COOPERII*, BONAPARTE — COOPER'S HAWK

BONAPARTE, PLATE X. FIG. 1.

BUFFON complained of the difficulty of writing a history of birds, because he already knew eight hundred species, and supposed that there might actually exist fifteen hundred, or even, said he, venturing as he thought to the limit of probability, two thousand! What then would be his embarrassment at present, when nearly six thousand species are known, and fresh discoveries are daily augmenting the number?

The difficulties attending a general work on this subject are not, perhaps, experienced in an equal degree by one who confines himself to the history of a particular group, or of the species inhabiting a single district. Nevertheless, in a work like the present, which is not a monography limited to one genus or family, but embraces within its scope species belonging to all the different tribes, it is requisite, in order to explain their various relations and analogies, that the author should be more or less acquainted with the whole system of nature. To attempt, without the aid of methodical arrangement, a subject so vast, and apparently unlimited, would be hopeless. Hence the importance of a correct system of classification; and the construction of one which shall exhibit, as far as practicable, the true affinities of objects, has exercised the attention of the most powerful minds that have been employed in the study of nature.

That division of the feathered tribe popularly called birds of prey, has always been recognized as a separate and well defined group. In the Linnæan System they form the order ACCIPITRES, and were, by that father of the science, distributed into three great natural divisions, which comprise nearly, if not quite, one-fifteenth part of all the known species of birds. The ulterior arrangement of one of these groups, the genus *Falco* of Linné, at present composed of between two and three hundred species, has much divided the opinions of naturalists. From the majestic eagle, the terror of the husbandman, to the feeblest hawk, preying on grasshoppers, it is undeniable that there exists in all these birds a great resemblance in some of the most prominent characteristics, which, being found to predominate in the fish hawk, as well as the kite, and all other species of the falcon tribe, however dissimilar, indicate their separation as a peculiar family from all other birds. But that they are susceptible of division into smaller groups of inferior rank, no practical ornithologist will for a moment deny. Whether these minor groups shall be considered as trivial and secondary, or whether some of them ought not to be admitted as distinct and independent genera, is a question that has been much agitated, and respecting which ornithologists will probably for a long time continue to disagree. Equally great authorities might be cited in favour of either of these opinions, which, like many others of more importance that have divided mankind from the beginning of the world, may perhaps after all be considered as merely a dispute about words.

Admitting, however, as seems to be done by all parties, that this great genus may be subdivided with propriety, we look upon it as altogether a secondary question, whether we shall call the minor groups genera, subgenera, or sections; and we deem it of still less consequence, in a philosophical view, whether the names by which these groups are designated, be taken from a learned or a vernacular language. It is our intention to pursue a middle course. We are convinced of the

necessity of employing numerous subdivisions, not only in this, but also in its allied genus *Strix*. These, however, we cannot agree to admit as genera, preferring to call them subgenera, and giving them a name, but when having occasion to mention a species belonging to any of them, to employ the name of the great genus.

The desire of avoiding too great a multiplication of groups, has caused some, even of the first ornithologists of our time, to employ sections that are not natural, and with false or inapplicable characters, and, as if they would compel nature to conform to their preconceived and narrow views, after having assigned decided limits to their groups, to force into them species not only widely different, but that do not even possess the artificial character proposed. We shall not imitate this irrational example. It shall rather be our object to compose natural groups, and, in obedience to this principle, whenever we meet with a group, or even a single species, clearly insulated, it shall at least be pointed out, not so much regarding the number of our subgenera, as the characters that unite the species of which they are respectively composed.

It is objected to the numerous subdivisions that have been proposed in our day, that they pass into and blend insensibly with each other. This is no doubt true; but is it not the same with regard to natural groups of every denomination? It is this fact which has induced us to consider them as subgenera, and not as distinct genera. We are told, however, by the advocates for numerous genera, that, in giving a name, we adopt a genus, but we do not see that this necessarily follows.

There are, we confess, other grounds on which we might be attacked with more advantage. We may, perhaps, be charged with inconsistency in refusing to admit, as the foundation of generic groups in the *Rapaces*, characters which are allowed, not only by ourselves, but by some of those who are most strenuously opposed to the multiplication of genera, to have quite sufficient importance for such distinction in other families. With what propriety, it might be asked, can

we admit *Hydrobates* (*Fuligula*, *Nob.*) as distinct from *Anas*, and the various genera that have been dismembered from *Lanius*, at the same time that we reject, as genera, the different groups of hawks? To this we can only reply, that we are ourselves entirely convinced, that all the subgenera adopted in our synopsis among the *Falcones* of North America, are quite as distinct from each other as *Coccyzus* and *Cuculus*, or *Corvus* and *Garrulus*. The latter genus we have admitted after Temminck, who is opposed to new genera among the hawks, though *Astur* and *Elanus* certainly require to be separated no less than the two genera that Temminck himself has established in the old genus *Vultur*.

No living naturalist (with the exception of those who, through a sort of pseudo-religious feeling, will only admit as genera groups indicated as such by Linné) has adhered longer than ourselves to large genera, at the same time that we could not deny the existence of subordinate natural groups. We will not pretend to deny that these are of equal rank with some recognized as genera in other families, and we can only say, that we consider it doubtful, in the present unsettled state of the science, what this rank ought to be. We therefore, in the instances above quoted, consider it of little importance whether these groups be considered as genera or subgenera.

But what is certainly of great importance is, to preserve uniformity in all such cases; to make co-ordinate divisions, and give corresponding titles to groups of equal value. This uniformity, however desirable, cannot, in the actual state of ornithology, be easily attained; and we have decided, after much hesitation, to continue to employ subgenera. In doing this, we are moreover influenced by the great difficulty that is met with, in some cases, in determining the proper place of a species partaking of the characters of several groups, yet not in the least deserving to be isolated; such as *Falco borealis*, which is almost as much an *Astur* as a *Buteo*, and has been placed by authors, according to their different views, in both these groups.

An extensive reform is evidently needed in the department of classification that relates to genera, and we propose, with this view, to undertake at some future period a general work, when, erecting our system on a more philosophical basis, though we may restrict some, and enlarge other genera, we shall, in the instances to which we have alluded, as well as in a multitude of others, at least place them all on an equal footing.

Among the several groups into which the falcon tribe is divided, we come to one composed of about sixty species, well marked, and, if kept within its proper bounds, very natural, to which authors have variously applied the name of *Accipiter*, *Sparvius*, and *Astur*, which last we have adopted.

Found in all parts of the globe, and destroying every where great numbers of birds, and small quadrupeds, the hawks (by which English name we propose to distinguish this group more particularly) closely resemble each other in colour and changes of plumage, especially the North American and European species. They are eminently distinguished from all other falcons by their short wings, not reaching by a considerable length to the tip of their tail, which is even, or but very slightly rounded; and by their first quill feather or primary, which is very short, while the fourth is constantly the longest. Their bill, suddenly curved from the base, is very strong and sharp; their head is narrowed before, with the eyes placed high, large, and fiery. Their feet are very long, and the toes especially, the middle one of which is much the longest, and all are armed with very strong sharp talons, well seconding the sanguinary nature of these fierce creatures; their outer toe is connected at base by a membrane to the middle one. The female is always one-third larger than the male, and the plumage of both is, in most species, dark above and white beneath; in the adult, barred with reddish or dusky. In the young bird the colour is lighter, the feathers skirted with ferruginous, and the white of the under parts streaked longitudinally with dusky, instead of being barred. The tail is uniform in colour with

the back, with almost always a few broad bands of black, and sometimes of white, and a whitish tip.

The hawks (*Astures*) combine cunning with agility and strength. Sudden and impetuous in their movements, they make great havoc, especially among birds that keep in flocks, as pigeons, blackbirds, &c. and are the terror of the poultry yard. Fearless and sanguinary, they never feed, even when pressed by hunger, except on red and warm-blooded animals, whose quivering limbs they tear with savage delight. Birds they pluck very carefully, and quarter, before eating them, but swallow small quadrupeds entire, afterwards ejecting their skins rolled up into a ball. They always pursue and seize their prey upon the wing, not falling upon it from aloft, but, rapidly skimming the earth, make their insidious approaches sidewise, and, singling out their victim, dart upon it with fatal velocity. They never soar, like the kites and eagles, to the upper regions of the atmosphere; and it is only during the nuptial season that they are observed sailing in wide circles in the air. Their favourite haunts, during summer, are forests, building their nests on trees; in winter they spread over the plains. Though generally observed alone, the male and his companion are seldom far apart. During the youth of their progeny, the parents keep them company, in order to teach them to hunt their prey, and at such times they are observed in families.

This group may be farther subdivided into two sections, to one of which the name of *Astur* has more strictly been assigned, while the other has been distinguished by those of *Sparvius* and *Accipiter*. The former, of which the goshawk of Europe and North America (black-capped hawk of Wilson) is the type, is characterized by its wings being somewhat longer, body more robust, and shorter, and much thicker tarsi. This is the only species that inhabits the United States and Europe.

The second section, to which the present new species belongs, possessing all its characters in a pre-eminent degree, equally with the hawk described by Wilson in

its adult state as *Falco Pennsylvanicus*, and in its youth as *Falco velox*, was established on the sparrow hawk of Europe, *Falco nisus*, but the American species just mentioned are no less typical. The hawks of this section are more elegantly shaped, being much more slender; their wings are still shorter than in the other section, reaching little beyond the origin of the tail, and their tarsi slender and elongated, with a smooth and almost continuous covering.

Notwithstanding their smaller size and diminished strength, their superior courage and audacity, and the quickness of their movements, enable them to turn the flight of the largest birds, and even sometimes, when in captivity together, to overcome them. We have kept a sparrow hawk, (*Falco nisus*,) which, in the space of twenty-four hours that he was left unobserved, killed three falcons which were confined with him.

The inextricable confusion reigning throughout the works of authors who have not attended to the characters of the different groups of this genus, renders it next to impossible to decide, with any degree of certainty, whether our *Falco Cooperii* has or has not been recorded. Though agreeing imperfectly with many, we have not been able, notwithstanding our most sedulous endeavours, to identify it with any. It is evidently a young bird, and we should not be surprised at its proving, when adult, a known species, perhaps one of the numerous species figured of late, and possibly *Le Grand Epervier de Cayenne* of Daudin, *Sparvius major*, Vieillot, stated to be one-third larger than the European sparrow hawk. At all events, however, it is an acquisition to the ornithology of these States; and we have ventured to consider it as a new species, and to impose on it the name of a scientific friend, William Cooper of New York, to whose sound judgment, and liberality in communicating useful advice, the naturalists of this country will unite with us in bearing testimony, and to whom only the author, on the eve of his departure for Europe, would have been

willing to intrust the ultimate revision and superintendence of this work.

Our bird agrees very well with the falcon gentle, *Falco gentilis*, Linné; but as that species is referred to the young of the goshawk, we have preferred giving it a new name to reviving one that might have created an erroneous supposition of identity. To the young goshawk, our hawk is, in fact, extremely similar in colour and markings, being chiefly distinguished from it by the characters of their respective sections, having the tarsi much more slender and elongated, and the wings still shorter; the tail is also considerably more rounded.

But it is to the sharp-shinned hawk (*Falco velox*) of Wilson, the *Falco Pennsylvanicus*, or *Falco fuscus* in its immature plumage, that our Cooper's hawk bears the most striking resemblance, and is in every particular most closely allied. Even comparing feather by feather, and spot by spot, they almost perfectly agree; but the much larger size of the present, it being more than twice the bulk, will always prevent their being confounded, even by the most superficial observer. Another good mark of discrimination may be found in the comparative length of the primaries; the second in *F. Cooperii* being subequal to the sixth, while in *F. velox* it is much shorter. The latter has also the fifth as long as the fourth; that, in our species, being equal to the third. The tail is also much more rounded, the outer feather being nearly an inch shorter than the middle one. In *F. velox* the tail is even, the outer feather being as long, or, if any thing, longer than the middle. There is no other North American species for which it can be mistaken.

The bird here described, of which we have seen seven or eight specimens, perfectly similar in size and plumage, was a male, killed in the latter part of September, near Bordentown, New Jersey. The stomach contained the remains of a sparrow. Another that we procured, was shot on the 12th of December, while in the act of devouring on the ground a full-grown ruffed

grouse which he had killed, though a larger and heavier bird than himself. Mr Cooper, the friend to whom we have dedicated this species, has recently favoured us with an accurate description of a specimen of a somewhat larger size, shot in the early part of November, on the eastern part of Long Island.

The male Cooper's hawk is eighteen inches in length, and nearly thirty in extent. The bill is black, or rather blackish brown; the cere, greenish yellow; the angles of the mouth, yellow. The irides are bright yellow. The general colour above is chocolate brown, the feathers being whitish gray at base; on the head, and neck above, they are blackish, margined with rufous, pure white towards the base, and grayish at the bottom, the white colour shewing itself on the top and sides of the neck, and being much purer on the nucha. The back and rump are the same, but the feathers larger, and lighter coloured, less margined with rufous, more widely grayish at base, and bearing each four regular spots of white in the middle of their length, which are not seen unless when the feathers are turned aside. The whole body beneath is white, each feather, including the lower wing-coverts and femorals, marked with a long, dusky medial stripe, broader and oblanceolate on the breast and flanks, (some of the feathers of which have also a blackish band across the middle,) the throat, and under wing-coverts; the long feathers of the flanks (or long axillary feathers) are white, banded with blackish; the vent and lower tail-coverts, pure white; the wings are nine inches long, and, when folded, hardly reach to the second bar of the tail from the base; the smaller wing-coverts and scapulars, are like the back, the quills brown above, (lighter on the shaft) and silvery gray beneath, regularly crossed by blackish bands, less conspicuous above; the space between the bands is white on the inner vanes at base; some of the secondaries and tertials are tipped and edged with rusty, and have more and more of white as they approach the body, so that those nearest may in fact be described as white banded with blackish. The first primary is very short,

more so than the secondaries; the second is equal to the sixth, the third to the fifth, these two last mentioned being hardly shorter than the fourth, which, as in all *Astures*, is longest. The tail is full eight inches long, reaching five beyond the wings; its colour is ashy brown, much paler beneath, tipped with whitish, and crossed by four equidistant blackish bands, nearly one inch in breadth; the tail-coverts at their very base are whitish; the lateral feathers are lighter, and with some white on the inner webs. The legs and feet are yellow, slender, and elongated, but still do not reach, when extended, to the tip of the tail; the tarsus, feathered in front for a short space, is two and three quarter inches long; as in other *Astures*, the middle toe is much the longest, and the inner, without the nail, is shorter than the outer, but taken with its much longer nail, is longer. The talons are black, and extremely sharp, the inner and the hind ones subequal, and much the largest, while the outer is the most delicate.

The female is larger, and measures two inches more in length, but in plumage is perfectly similar to the male. As the male we have described is evidently a young bird, it is very probable that the adult, after undergoing the changes usual in this group, obtains a much darker and more uniform plumage above, and is beneath lineated transversely with reddish. That in this supposed plumage, the bird has not yet been found, is no reason to doubt its existence, as the species is comparatively rare. Even of the common *Falco fuscus*, though constantly receiving numerous specimens of the young, we have only been able to procure a single one in adult plumage, during a period of four years.

We regret that this is all that is in our power to offer of the history of this species, which, as will be seen from the description, possesses in an eminent degree the characters of the group. From the circumstance of its being found here in autumn and winter, we are led to infer, that it comes to us from the north.

2. *FALCO DISPAR*, BONAPARTE. — WHITE TAILED HAWK.

BONAPARTE, PLATE XI. FIG. 1.

THIS beautiful hawk, which we recently discovered to be an inhabitant of North America, is so strikingly similar to the black-winged hawk (*Falco melanopterus**) of the Old Continent, that we have hitherto considered them as identical, contrary to the opinion of Vieillot, whose authority, it is true, could in this case be of little weight, as he had not seen the species, but like many others had merely given it a name; his sole knowledge of it being derived from the work of D'Azara. We have now yielded only to the decision of Temminck, (who has lately introduced the young into his *Planches Coloriées*;) but not without much reluctance, especially as that distinguished ornithologist has evidently not been at the trouble of comparing the two species; otherwise, he would certainly not have omitted noticing their affinities and differential characters; since in the history of species so closely allied as these two, the differential characters are of more importance and utility than the most laboured descriptions.

This comparison we have carefully instituted between

* *Falco melanopterus*, Daud. *Orn.* 2, p. 152, *Sp.* 124. Lath. *Ind. Suppl.* p. 6. *Sp.* 16.

Falco Sonninensis, Lath. *Ind. Suppl.* p. 12, *Sp.* 38.

Elanus casius, Savigny, *Ois. d'Égypt.* p. 98, pl. 2, f. 2. Vieill. *Nouv. Dict. d'Hist. Nat.* 8. p. 240, (now *Elanoides*.)

Elanus melanopterus, Leach, *Zool. Misc.* 3, p. 4, pl. 122. Vigors, *Descr. Austral. Birds*, in Tr. Lin. Soc. 15, p. 185.

Le Blac, Le Vaillant, *Ois. d'Afr.* 1, p. 147, pl. 36, male, 37, young male.

Black-winged falcon, Lath. *Syn. Suppl.* 2, p. 28, *Sp.* 23.

Sonnini's falcon, Lath. *Syn. Suppl.* 2, p. 52, *Sp.* 59.

The inspection of original drawings, in a collection that Mr Gray, of the British Museum, was kind enough to shew me lately in London, has enabled me to add to these already numerous synonyms, *Falco axillaris*, Lath. *Ind. Suppl.* (*Circus axillaris*, Vieill.!) from New Holland.

our American specimens, and others from Africa and Java. They agreed perfectly, especially with that from Java, in every, the minutest character, even feather by feather, much better than birds of prey of the same species, and from the same country, do generally. They are even more alike than different specimens from the Old Continent of the black-winged itself, since that species is said to vary considerably in the black markings, which extend more or less on the wings in different individuals. Nevertheless, a constant, though trivial, differential character, added to the difference of locality, has induced us to follow Temminck's course, in which we should never have ventured to take the lead. This character consists in the tail being in *Falco dispar* constantly irregular, while in *F. melanopterus*, it is even; or to explain it more clearly, the outer tail-feather is rather the longest in the African, and more than half an inch shorter than the next in the American species. This essential character is much more conspicuous in Temminck's plate than in ours, owing to the tail being spread. In the black-winged, also, the lower wing-coverts are destitute of the black patch so conspicuous in the American bird; a female from Java has, however, a slight indication of it, but no trace of it is observable in our African males.

By admitting this to be a distinct species from the black-winged hawk, we reject one more of those supposed instances, always rare, and daily diminishing upon more critical observation, of a common habitation of the same bird in the warm parts of both continents, without an extensive range also to the north. A steady and long protracted exertion of its powerful wings, would have been requisite to enable it to pass the vast and trackless sea which lies between the western coast of Africa, the native country of the black-winged hawk, and the eastern shores of South America. Yet were the species identical, this adventurous journey must have been performed. For, even admitting several centres of creation, we cannot believe

that nature,* who, notwithstanding her luxuriant abundance, evidently accomplishes all her ends with the greatest economy of means, has ever placed, aboriginally, in different parts of the globe, individuals of the same species; but has always given to each the power of extending its range, according to volition, in any direction where it should find climate, food, or other circumstances most appropriate.

The white-tailed hawk is one of those anomalous species, which connect the generally received divisions of the great genus *Falco*. It participates in the form and habits of the kites (*Milvus*,) while in its other relations it approaches the true falcons (*Falco*,) and at the same time presents traits peculiar to itself. Savigny has, therefore, very properly considered its near relative, the black-winged, as the type of a peculiar group, which he elevates to the rank of a genus, but which we for the present shall adopt as a subgenus only. Subsequent observations have confirmed Le Vaillant's opinion, that the swallow-tailed hawk (*Falco furcatus*,) is closely related to it; and associated with a few other recently discovered species, they have been considered as a distinct group, under Savigny's name of *Elanus*. Vieillot adopted the group as a genus, but, for what reason we know not, has since changed the name to *Elanoides*. The hawks of this group are readily distinguished from all others, by the superior length of the second primary of their elongated wings; by their bill, rounded above, curved from the base, and not toothed; their hirsute cere; thick, short, and wholly reticulated tarsi, half feathered before; toes entirely separated, and powerful nails. The head is flattened above, the gape wide, and the eyes large, deep sunk, and with the orbits greatly projecting above. The colours are also similar in the different species, being white, or pale, (bluish white, &c.) with more

* The word *nature* being taken in so many different acceptations, we think proper to state, that with Ranzani, we mean by it "the aggregate of all created beings, and of the laws imposed on them by the Supreme Creator."

or less of black. The comparatively even tail of the two allied species of which we are treating, eminently distinguishes them from the others of the subgenus, which have the tail exceedingly forked. They are remarkable also for another characteristic, that of having the nails rounded beneath, and not canaliculated, a circumstance that occurs besides only in the subgenus *Pandion*.* This character, which we formerly attributed to all the *Elani*, and which we believe we first observed not to exist in the fork-tailed species, has induced Mr Vigors, the English ornithologist, to separate the latter as a new genus, under the name of *Nauclerus*.

The female white-tailed hawk, is sixteen and a half inches long, and three feet five and a half inches in extent. The bill is black, and measures from the corners of the mouth one inch and a half, the sides of the mouth, posterior portion of the lower mandible, and cere, bright yellow orange; bristles on the cere white, as well as those first on the lores; those nearest the eye, black; irides, brownish red; eyelids, white; cilia, long and black; orbits, black, wider before the eye; front line over the orbits, sides of the head, neck, and body, and whole inferior surface of the bird, together with the thighs, pure white; head, pearl gray, becoming gradually darker from the pure white front towards the neck and back, which are entirely bluish ash, as well as the rump, scapulars, secondaries, and greater wing-coverts; smaller and middle wing-coverts, deep glossy black; spurious wing, blackish; lining of the wing, and inferior coverts, pure white, the latter with a wide black patch; primaries on both surfaces, slate colour, the shafts, black, and, the first excepted, margined exteriorly, and slightly at tip, with dusky, and interiorly, with whitish; the margin of the inner web is of a remarkably close texture, with a very soft surface; the first primary is a little shorter than the

* In *Pandion*, however, it is the middle nail that is rounded; in this species, it is the lateral and posterior only.

third; the second longest; the two outer ones are slightly serrated on their outer web. When closed, the wings reach within less than an inch of the tip of the tail. The tail is seven inches long, slightly emarginated, and with the outer feather more than half an inch shorter than the adjoining one; the middle feathers are very pale bluish slate, all the others pure white; shafts above, black towards the tip, and beneath, white; that of the exterior tail-feather, white, tipped with dusky above towards the base; feet, bright yellow orange; tarsus, one inch and a half long, feathered in front half its length, the remainder covered with small reticulated scales; toes, separated to the base; nails, large, black, very acute, and, with the exception of the middle one, perfectly rounded beneath; the middle one is very sharp on the inner side.

The male is of a smaller size; the upper surface, instead of being bluish slate, is more of a dirty grayish, slightly tinged with ferruginous; the tail is less purely white. These sexual differences are the more worthy of note, as they are the reverse of what is exhibited in other hawks. It is, however, possible, that they are not to be found in very old males.

The young of both sexes, but especially the young males, are somewhat darker, and are strongly tinged with ferruginous, principally on the head, neck, and wings; the breast being entirely of that colour. A specimen of the African species in this state is figured by Le Vaillant, whose plates in general are tolerably accurate; but how great is the disappointment of the ornithologist to find the tarsi represented as covered distinctly with plates, as in other hawks! We cannot let pass this opportunity of exhorting engravers, draftsmen, and all artists employed on works of natural history, never to depend on what they are accustomed to see, but in all cases to copy faithfully what they have under their eyes; otherwise, taking for granted what they ought not, they will inevitably fall into these gross errors. Even the accurate Wilson himself, or rather perhaps his engraver, has committed the same

error in representing the feet of the swallow-tailed hawk. Of what consequence, will it perhaps be said, is the form of the scales covering the foot of a hawk? But these afford precisely one of the best representative characters of groups, and it will, therefore, not be thought unnecessary to caution artists in this, and similar cases.

The young, as described by Temminck, is in a more advanced stage of plumage; the front, forepart of the neck, thighs, flanks, and under tail-coverts are pure white; the breast and belly are of the same colour, but are marked with reddish spots, and brown lines; the occiput, nucha, back, and scapulars are brownish, mixed with whitish, and more or less tinged with cinereous; all these feathers having wide margins of whitish and reddish; the upper tail-coverts are black, with reddish margins; the inferior marbled with black and white; the quills are bluish, terminated with white; the tail is of a grayish white, with black shafts; all the feathers have dark cinereous towards the point, and are tipped with white.

This species is an inhabitant of a great portion of the American continent, as the *Alcon blanco* of Paraguay, so well described by D'Azara, is undoubtedly the same bird. Vieillot undertook to classify it from D'Azara's description, applying to it the name of *Milvus leucurus*; but, after more attentive consideration, he perceived that it was not a *Milvus*, but an *Elanus*. He consequently removed it to that genus, which he called *Elanoides*, at the same time asserting, that with the swallow-tailed hawk, it ought to constitute a different section from the black-winged hawk; from which, upon actual comparison, it is with difficulty shown to be even specifically distinct! Such are the absurdities into which authors are betrayed through the highly reprehensible practice to which some are addicted, of attempting to classify and name animals they have never seen, from the descriptions, or mere indications, of travellers. Though, by such means, they may sometimes gain the credit of introducing a new species, and

found it to inhabit also in the interior, in the Camdebo, and on the shores of the Swart-kop, and Sunday rivers. It is very common in Congo, and numerous also in Barbary, Egypt, and far-distant Syria. The researches of Ruppel, in the interior of North-Eastern Africa, already so productive, and from which so much more may be expected, have furnished specimens of this species, of which we owe two to the kindness of Dr Creitzschmaer, the learned and zealous Director of the Museum of the free city of Frankfort,—an institution which has risen up with such wonderful rapidity. We are also informed, that it is an inhabitant of India, which is rendered probable by a specimen from Java in my collection. It is found in New Holland, being numerous in the autumn of New South Wales, where it is migratory, and preys chiefly on field mice, but is seldom known to attack birds. It is there observed at times to hover in the air, as if stationary and motionless. Though occasionally met with on the African coast of the Mediterranean, not a solitary individual has ever been known to visit the opposite shores of Italy, Spain, or Turkey, nor has it been met with in any other part of Europe.

When at rest, it is generally seen perched on high bushes, where the pure white of the lower parts of its body renders it very conspicuous at a distance. It utters a sharp piercing cry, which is often repeated, especially when on the wing, though Mr Peale assures us, that our individual uttered no cry. Like its closely related species, it does not attack small birds, except for the purpose of driving them from its favourite food, which consists of hemipterous insects, chiefly of the *Gryllus* and *Mantis* genera, as well as other insects, and some reptiles. In the stomach of our specimen, however, Mr Peale found, besides the usual food, fragments of an *Arvicola hispidus*, and one or two feathers apparently of a sparrow: but it is not a cowardly bird, as might be suspected from its affinity to the kites, and from its insignificant prey, since it successfully attacks crows, shrikes, and even the more

timid birds of its own genus, compelling them to quit its favourite haunts, which it guards with a vigilant eye. They build in the bifurcation of trees. The nest is broad and shallow, lined internally with moss and feathers. The female is stated to lay four or five eggs; the nestlings at first are covered with down of a reddish-gray colour.

The African species is said to diffuse a musky odour, which is retained even after the skin is prepared for the museum: but we are inclined to believe, that it is in the latter state only that it possesses this quality. Mr Peale did not observe any such odour in the bird he shot, but being obliged, for want of better food, to make his dinner of it in the woods, found it not unpalatable.

3. *FALCO CYANUS*, BONAP. — BLUE HAWK, OR HEN-HARRIER.

BONAPARTI, PLATE XII.

As will be perceived upon a slight inspection of our long and elaborate list of synonyms, [printed at the end of the volume,] this well known species is found in almost every part of the globe; and not only does it seem to have been considered every where distinct, but nearly every different appearance which it assumes during its progress through the various and extraordinary changes that its plumage undergoes according to sex and age, has in each country given rise to a nominal species. At the same time, however, that names were thus inconsiderately multiplied for one bird, two, really distinct, were always confounded together. Analogous in their changes, similar in form and plumage, it was reserved for the acute and ingenious Montague, to point out the difference, and establish the two species by permanent characters. The new one was called by him *Falco cineraceus*, and is known by the English name of ash-coloured harrier. It is figured and accurately described in all its states of plumage by Vieillot, in his *Galerie des Oiseaux*, where he has dedicated it to its discoverer, calling it *Circus Montagu*; thus fully apologizing for having, in his article *Buzzard*,

of the *New Dictionary of Natural History*, declared it to be a state of the other. How far, however, it may be considered a compliment to change the name given to a species by its discoverer, in order to apply even his own to it, we are at a loss to imagine.

The principal distinctive characters of the two species are to be found in the relative length of the wings and tail, and in the proportional lengths of the primaries. In the ash-coloured harrier, the sixth primary is shorter than the first, the second is much longer than the fifth, and the third is the longest; the wings, when closed, reach to the tip of the tail. In the hen-harrier, the first primary is shorter than the sixth, the second sub-equal to the fifth, and the third equal to the fourth, the longest; the wings closed, not reaching, by more than two inches, to the tip of the tail, which is also but slightly rounded in the latter, while in the ash-coloured it is cuneiform. Other minor differences are besides observable in the respective sexes and states of both; but as those we have indicated are the only ones that permanently exist, and may be found at all times, we shall not dwell on the others, especially as Montague's species appears not to inhabit America. We think proper to observe, however, that the adult male of *Falco cineraceus* has the primaries wholly black beneath, while that of the *F. cyaneus* has them black only from the middle to the point; and that the tail-feathers, pure white in the latter, are in the former spotted beneath. The female in our species is larger than the corresponding sex of the other, though the males in both are nearly of equal size; and the collar that surrounds the face is strongly marked in ours, whereas it is but little apparent in the other. The *F. cineraceus* has two white spots near the eyes, which are not in the *F. cyaneus*. The young of the former is beneath rusty without spots. Thus, slight but constant differences, are seen to represent a species, while the most striking discrepancies in colour, size, and (not in this but in other instances) even of form, prove mere variations of sex or age! We cannot wonder at the two real species having always

been confounded amidst the chaotic indications of the present.

Even Wilson was not free from the error which had prevailed for so long a period in scientific Europe, that the ring-tail and hen-harrier were two species. Though he did not publish a figure of the present in the adult plumage of the male, he was well acquainted with it as an inhabitant of the Southern States; for there can be no doubt that it is the much desired blue hawk which he was so anxious to procure; the only land bird he intended to add to his Ornithology, or at least the only one he left registered in his posthumous list. It was chiefly because he was not aware of this fact, and thought that no blue hawk existed in America corresponding to the European hen-harrier, that Mr Sabine, in the Appendix to Franklin's *Expedition* [as quoted in Synonyms,] persisted in declaring that the marsh-hawk was a distinct species peculiar to America, of which he supposed the Hudson's Bay ring-tail to be the young. The differences which he detected on comparing it with the European ring-tail, must have been owing to the different state of plumage of his specimen of this ultra-changeable species. If, however, he had not mentioned the colours merely, as bringing it nearer to the ash-coloured falcon of Montague, we might be inclined to believe that the specimen he examined was indeed a young bird of that species, which, though as yet unobserved, may, after all, possibly be found in North America. At all events, Wilson's, and the numerous American specimens that have passed under our examination, were all young hen-harriers.

After having stated, that the error of considering the hen-harrier and ring-tail as different species had prevailed for years in Europe, it is but just to mention, that Aldrovandi, Brisson, Ray, and others of the older authors, were perfectly in accordance with nature on this point. It was, perhaps, with Linné, or at least with Buffon, Gmelin, Pennant, and Latham himself, who afterwards corrected it, that the error originated. Latham, confident of his own observations, and those

of Pennant, who had found males of the species said to be the female of the *Falco cyaneus* (hen-harrier,) and not reflecting that these males may be the young, exclaims, "Authors have never blundered more than in making this bird (the ring-tail) the same species with the last mentioned (hen-harrier;)" an opinion that he was afterwards obliged to recant. In physical science, we cannot be too cautious in rejecting facts, nor too careful in distinguishing, in an author's statement, what has passed under his own eyes, however extraordinary it may seem, from the inference he draws from it. Thus, to apply the principle in this instance, Latham might have reconciled the fact of males and females being found in the plumage of the ring-tail; with the others, that no females were ever found under the dress of the hen-harrier, and that some ring-tails would gradually change into hen-harriers.

Whether or not the marsh-hawk of America was the same with the ring-tail of Europe, Wilson would not take upon himself to pronounce, as he has left to his bird the distinctive name of *Falco uliginosus*; though he positively states, that, in his opinion, they are but one species, and even rejects as false, and not existing, the only character on which the specific distinction was based, that of the American having "strong, thick, and short legs," instead of having them long and slender. For want of opportunity, however, of actually comparing specimens from both continents, he could choose no other course than the one he has followed; and so great appears to have been the deference of ornithologists for this extraordinary man, that, while they have unhesitatingly quoted as synonymous with the European hen-harrier, the African specimens described by Le Vaillant, and even the various nominal species created or adopted by Vieillot, as North American, the *Falco uliginosus* of former authors has been respected, probably, as the marsh-hawk of Wilson! But the latter is not more than the others, entitled to be admitted as distinct, being merely the present in its youthful dress.

The hen-harrier belongs to the subgenus *Circus*, which

in English we shall call harrier, the name of buzzard being appropriated to the *Buteones*. Though perfectly well marked in the typical species, such as this, the group to which our bird belongs passes insensibly into others, but especially into that called *Buteo*, some even of the North American species being intermediate between them. Whenever the groups of falcons shall be elevated to the rank of genera, it will perhaps be found expedient to unite *circus* and *buteo*, as they do not differ much more from each other than our two sections of hawks; those with long and slender legs, and those with short stout legs, *Astur* and *Sparvus* of authors, the line of demarcation being quite as difficult to be drawn.

The harriers are distinguished in their tribe by their weak, much compressed bill, destitute of a tooth or sharp process, but with a strongly marked lobe; their short and bristly cere; their long, slender, and scutellated tarsi; their slender toes, of which the outer are connected at base by a membrane; their nails, subequal, weak, channelled beneath, much incurved, and extremely sharp: a very remarkable characteristic is exhibited in their long wings, subequal to the tail, which is large, and even, or slightly rounded at tip: their first quill is very short, always shorter than the fifth, and the third or fourth is the longest. Their slender body and elegant shape chiefly distinguish them from their allies, the buzzards. They may be farther subdivided into those in which the female at least is possessed of that curious facial ring of scaly or stiff feathers, so remarkable in the owls, and those entirely destitute of it. One species only is found in the United States, which belongs to the first section, and cannot be confounded with any other than that from which we have thought proper to distinguish it at the beginning of this article. In this section, the female differs essentially from the male, the young being similar to her in colour. The latter change wonderfully as they advance in age, to which circumstance is owing the wanton multiplication that has been made of the species. In those which compose the

second section, the changes are most extraordinary, since, while the adult male is of a very uniform light colour, approaching to white, the female and young are very dark, and much spotted and banded : they are also much more conspicuously distinguished by the rigid facial ring.

These birds are bold, and somewhat distinguished for their agility, especially when compared with the buzzards ; and in gracefulness of flight they are hardly inferior to the true falcons. They do not chase well on the wing, and fly usually at no great height, making frequent circuitous sweeps, rarely flapping their wings, and strike their prey upon the ground. Their food consists of mice, and the young of other quadrupeds, reptiles, fishes, young birds, especially of those that build on the ground, or even adult water birds, seizing them by surprise, and do not disdain insects ; for which habits they are ranked among the ignoble birds of prey. Unlike most other large birds of their family, they quarter their victims previously to swallowing them, an operation which they always perform on the ground. Morasses and level districts are their favourite haunts, being generally observed sailing low along the surface, or in the neighbourhood of waters, migrating when they are frozen. They build in marshy places, among high grass, bushes, or in the low forks or branches of trees ; the female laying four or five round eggs, entirely white, or whitish, without spots. During the nuptial season, the males are observed to soar to a considerable height, and remain suspended in the air for a length of time.

The male hen-harrier is eighteen inches long, and forty-one in extent ; the bill is blackish horn colour ; the cere greenish yellow, almost hidden by the bristles projecting from the base of the bill ; the irides are yellow. The head, neck, upper part of the breast, back, scapulars, upper wing-coverts, and middle tail-feathers, pale bluish gray, somewhat darker on the scapulars ; the upper coverts, being pure white, constitute what is called a white rump, though that part is

of the colour of the back, but a shade lighter; breast, belly, flanks, thighs, under wing-coverts, and under tail-coverts, pure white, without any spot or streak. The wings measure nearly fourteen inches, and, when closed, reach only two-thirds the length of the tail, which is eight and a half inches long, extending by more than two inches beyond them; the primaries, of which the first is shorter than the sixth, the second and fifth subequal, and the third and fourth longest, are blackish, paler on the edges, and white at their origin, which is more conspicuous on their inferior surface; the secondaries have more of the white, being chiefly bluish gray on the outer web only, and at the point, which is considerably darker. The tail is but very slightly rounded. All the tail-feathers have white shafts, and are pure white beneath; the middle ones are bluish gray, the lateral almost purely white; somewhat grayish on the outer vane, and obsoletely barred with blackish gray on the inner. The feet are bright yellow, and the claws black; the tarsus is three inches long, and feathered in front for an inch.

The female is larger, being between twenty and twenty-one inches long, and between forty-four and forty-seven in extent; the tarsi, wings, and tail, proportionally longer, but strictly corresponding with those of the male. The general colour above is chocolate-brown, more or less varied with yellowish rufous; the space round the orbits is whitish, and the auriculars are brown; the small stiff feathers forming the well marked collar, or ruff, are whitish rusty, blackish brown along the shaft; the feathers of the head and neck are of a darker brown, conspicuously margined with yellowish rusty; on the nucha, for a large space, the plumage is white at the base, as well as on the sides of the feathers, so that a little of that colour appears even without separating them; those of the back and rump are hardly, if at all, skirted with yellowish rusty, but the scapulars and wing-coverts have each four regular large round spots of that colour, of which those farthest from the base lie generally uncovered; the upper tail-

coverts are pure white, often, but not always, with a few rusty spots, constituting the so called white rump, which is a constant mark of the species in all its states of plumage. The throat, breast, belly, vent, and femorals, pale yellowish rusty, streaked lengthwise with large acuminate brown spots darker and larger on the breast, and especially the under wing-coverts, obsolete on the lower parts of the body, which are not spotted. The quills are dark brown, whitish on the inner vane, and transversely banded with blackish; the bands are much more conspicuous on the inferior surface, where the ground colour is grayish white. The tail is of a bright yellowish rusty, the two middle tail-feathers dark cinereous; all are pure white at the origin, and regularly crossed with four or five broad blackish bands; their tips are more whitish, and the inferior surface of a grayish white, like that of the quills, but very slightly tinged with rusty, the blackish bands appearing to great advantage, except on the outer feathers, where they are obsolete, being less defined even above.

The young male is almost perfectly similar in appearance to the adult female, (which is not the case in the ash-coloured harrier,) being, however, more varied with rusty, and easily distinguished by its smaller size. It is in this state that Wilson has taken the species, his very accurate description being that of a young female. The male retains this plumage until he is two years old, after which he gradually assumes the gray plumage peculiar to the adult: of course they exhibit almost as many gradations as specimens, according to their more or less advanced age. The ash and white appear varied or mingled with rusty; the wings, and especially the tail, exhibiting more or less indications of the bands of the young plumage. The male, when he may be called already adult, varies by still exhibiting the remains of bands on the tail, more or less marked or obliterated by the yellowish edges of the feathers of the back and wings, and especially by retaining on the hindhead a space tinged with rusty, with blackish spots. This space is more or less indicated, in the greater part, both of the

American and European specimens I have examined. Finally, they are known by retaining traces of the yellowish of the inferior surface in larger or smaller spots, chiefly on the belly, flanks, and under tail-coverts.

The hen-harrier's favourite haunts are rich and extensive plains, and low grounds. Though preferring open and champaign countries, and seeming to have an antipathy to forests, which it always shuns, it does not, like the ash-coloured harrier, confine itself to marshes, but is also seen in dry countries, if level. We are informed by Wilson, that it is much esteemed by the southern planters, for the services it renders in preventing the depredations of the rice-birds upon their crops. Cautious and vigilant, it is not only by the facial disk that this bird approaches the owls, but also by a habit of chasing in the morning and evening, at twilight, and occasionally at night when the moon shines. Falconers reckon it among the ignoble hawks. Cruel, though cowardly, it searches every where for victims, but selects them only among weak and helpless objects. It preys on moles, mice, young birds, and is very destructive to game; and does not spare fishes, snakes, insects, or even worms. Its flight is always low, but, notwithstanding, rapid, smooth, and buoyant. It is commonly observed sailing over marshes, or perched on trees near them, whence it pounces suddenly upon its prey. When it has thus struck at an object, if it re-appears quickly from the grass or reeds, it is a proof that it has missed its aim; for, if otherwise, its prey is devoured on the spot.

It breeds in open wastes, frequently in thick furze coverts, among reeds, marshy bushes, the low branches of trees, but generally on the ground. The nest is built of sticks, reeds, straw, leaves, and similar materials heaped together, and is lined with feathers, hair, or other soft substances; it contains from three to six, but generally four or five, pale bluish-white eggs, large and round at each end; the young are born covered with white down, to which succeed small feathers of a rust colour, varied with brown and black. If any one

approaches the nest during the period of rearing the young, the parents evince the greatest alarm, hovering around, and expressing their anxiety by repeating the syllables, *geg, geg, gag*; or *ge, ge, ne, ge, ge*. Crows manifest a particular hostility to this species, and destroy numbers of their nests.

The hen-harrier is widely spread over both continents, perhaps more than any other land bird, though it is nowhere remarkably numerous. In the northern countries of America, it is a migratory species, extending its wanderings from Florida to Hudson's Bay. It is not known to breed in the Northern, or even in the Middle States, where the adults are but rarely seen. In the Southern parts of the Union, and especially in Florida, they are rather common in all their varieties of plumage. The species is also found in the West Indies, Cayenne, and probably has an extensive range in South America. It is found throughout Britain, Germany, Italy, the north of Africa, and the northern portion of Asia. It is very common in France and the Netherlands, is found in Russia and Sweden, but does not inhabit the north of Norway, being by no means an Arctic bird. It is again met with in the southern parts of Africa, near the Cape of Good Hope, and is not uncommon all along the eastern coast of that continent. In Switzerland, and other mountainous countries, it is of very rare occurrence.

GENUS III — *STRIX*, LINNEUS

4. *STRIX CUNICULARIA*, MOLINA. — BURROWING OWL, BONAP.

BONAPARTE, PLATE VII. FIG. II.

VENERABLE ruins, crumbling under the influence of time and vicissitudes of season, are habitually associated with our recollections of the owl; or he is considered as the tenant of sombre forests, whose nocturnal gloom is rendered deeper and more awful by the harsh dissonance of his voice. In poetry he has long been regarded as the appropriate concomitant of darkness and horror; and, when heard screaming from the top-

most fragments of some mouldering wall, whose ruggedness is but slightly softened by the mellowing moonlight, imagination loves to view him as a malignant spirit, hooting triumphantly over the surrounding desolation ! But we are now to make the reader acquainted with an owl to which none of these associations can belong ; a bird that, so far from seeking refuge in the ruined habitations of man, fixes its residence within the earth ; and, instead of concealing itself in solitary recesses of the forest, delights to dwell on open plains, in company with animals remarkable for their social disposition, neatness, and order. Instead of sailing heavily forth in the obscurity of the evening or morning twilight, and then retreating to mope away the intervening hours, our owl enjoys the broadest glare of the noonday sun, and, flying rapidly along, searches for food or pleasure during the cheerful light of day.

The votaries of natural science must always feel indebted to the learned and indefatigable Say, for the rich collection of facts he has made whenever opportunities have been presented, but more especially in the instance of this very singular bird, whose places of resort in this country are too far distant to allow many the pleasure of examining for themselves. We feel doubly disposed to rejoice that the materials for the history of our bird are drawn from his ample store, both on account of their intrinsic excellence, and because it affords us an opportunity of evincing our admiration of the zeal, talents, and integrity, which have raised this man to the most honourable and enviable eminence as a naturalist.

In the trans-Mississippian territories of the United States, the burrowing owl resides exclusively in the villages of the Marmot, or Prairie Dog, whose excavations are so commodious, as to render it unnecessary that our bird should dig for himself, as he is said to do in other parts of the world, where no burrowing animals exist. These villages are very numerous, and variable in their extent, sometimes covering only a few acres, and at others spreading over the surface of the country

for miles together. They are composed of slightly elevated mounds, having the form of a truncated cone, about two feet in width at base, and seldom rising as high as eighteen inches above the surface of the soil. The entrance is placed either at the top or on the side, and the whole mound is beaten down externally, especially at the summit, resembling a much-used foot-path.

From the entrance, the passage into the mound descends vertically for one or two feet, and is thence continued obliquely downwards, until it terminates in an apartment, within which the industrious marmot constructs, on the approach of the cold season, the comfortable cell for his winter's sleep. This cell, which is composed of fine dry grass, is globular in form, with an opening at top capable of admitting the finger; and the whole is so firmly compacted, that it might, without injury, be rolled over the floor.

It is delightful, during fine weather, to see these lively little creatures sporting about the entrance of their burrows, which are always kept in the neatest repair, and are often inhabited by several individuals. When alarmed, they immediately take refuge in their subterranean chambers, or, if the dreaded danger be not immediately impending, they stand near the brink of the entrance, bravely barking and flourishing their tails, or else sit erect to reconnoitre the movements of the enemy.

The mounds thrown up by the marmot in the neighbourhood of the Rocky Mountains, have an appearance of greater antiquity than those observed on the far distant plains. They sometimes extend to several yards in diameter, although their elevation is trifling, and, except immediately surrounding the entrance, are clothed with a scanty herbage which always distinguishes the area of these villages. Sometimes several villages have been observed almost entirely destitute of vegetation, and, recollecting that the marmot feeds exclusively on grasses and herbaceous plants, it seems singular that this animal should always choose the

most barren spot for the place of his abode. However this may be accounted for, it at least affords an opportunity of beholding the approach of his enemies, and allows him to seek, within the bosom of the earth, that security which he has neither strength nor arms to command.

In all these prairie dog villages, the burrowing owl is seen moving briskly about, or else in small flocks scattered among the mounds, and, at a distance, it may be mistaken for the marmot itself, when sitting erect. They manifest but little timidity, and allow themselves to be approached sufficiently close for shooting; but, if alarmed, some or all of them soar away, and settle down again at a short distance; if farther disturbed, their flight is continued until they are no longer in view, or they descend into their dwellings, whence they are difficult to dislodge.

The burrows into which these owls have been seen to descend, on the plains of the river Platte, where they are most numerous, were evidently excavated by the marmot, whence it has been inferred by Say, that they were either common, though unfriendly residents of the same habitation, or that our owl was the sole occupant of a burrow acquired by the right of conquest. The evidence of this was clearly presented by the ruinous condition of the burrows tenanted by the owl, which were frequently caved in, and their sides channelled by the rains, while the neat and well preserved mansion of the marmot shewed the active care of a skilful and industrious owner. We have no evidence that the owl and marmot habitually resort to one burrow, yet we are well assured by Pike and others, that a common danger often drives them into the same excavation, where lizards and rattlesnakes also enter for concealment and safety.

The owl observed by Vieillot in St Domingo digs itself a burrow two feet in depth, at the bottom of which its eggs are deposited on a bed of moss, herb stalks, and dried roots. These eggs are two in number, of a very pure white, nearly spheroidal, and about as

large as those of the dove. When the young are only covered with down, they frequently ascend to the entrance to enjoy the warmth of the sun, but, as soon as they are approached, they quickly retire into the burrow.

The note of our bird is strikingly similar to the cry of the marmot, which sounds like *cheh, cheh*, pronounced several times in rapid succession; and, were it not that the burrowing owls of the West Indies, where no marmots exist, utter the same sound, it might be inferred that the marmot was the unintentional tutor to the young owl: this cry is only uttered as the bird begins its flight. Vieillot states, that the burrowing owl inhabiting St Domingo sometimes alights on farm-houses at night, and produces a note which resembles that of the syllables *hoo, hoo, oo, oo*; but has he not mistaken a nocturnal species for it in this case?

The food of the bird we are describing appears to consist entirely of insects, as, on examination of its stomach, nothing but parts of their hard wing-cases were found. The authors we have quoted, inform us, that, in Chili and St Domingo, the burrowing owls also feed on rats, mice, and reptiles, which we cannot suppose to be the case with the bird found in the United States, as our explorers never could discover the slightest reason for believing that they preyed on the marmots, whose dwellings they invade.

Throughout the region traversed by the American Expedition, the marmot was unquestionably the artificer of the burrow inhabited by the owl, while the testimony of Vieillot is equally conclusive that the owl digs for himself when he finds no burrow to suit his purpose; but, preferring one already made, his fondness for the prairie dog villages is readily explained.

Whether only a single species of burrowing owl inhabits the vast continent of North and South America, or whether that of Chili mentioned by Molina, that of St Domingo described by Vieillot, and the owl of the western American territory, be distinct, though closely allied species, can only be determined by accurate

comparisons.* When we consider the extraordinary habits attributed to all those, as well as their correspondence in form and colours noted in the several descriptions, we are strongly inclined to believe that they are all of the same species; nevertheless Vieillot states his bird to be somewhat different from that of Molina, and the eggs of the burrowing owl of the latter are spotted with yellow, whilst those of the former are immaculate. We have to regret that no figure has hitherto been published, and we cannot well understand why Vieillot did not thus exemplify so interesting a bird.

The peculiar subgenus of this bird has not hitherto been determined, owing to the neglect with which naturalists have treated the arrangement of extra European owls. Like all diurnal owls, our bird belongs to the subgenus *noctua* of Savigny, having small oval openings to the ears, which are destitute of operculum, the facial disk of slender feathers small and incomplete, and the outer edges of the primaries not recurved; but it differs from them in not having the tarsus and toes covered by long thick feathers.

The burrowing owl is nine inches and a half long, and two feet in extent. The bill is horn colour, paler on the margin, and yellow on the ridges of both mandibles; the inferior mandible is strongly notched on each side; the capistrum before the eyes terminates in black rigid bristles, as long as the bill; the irides are bright yellow. The general colour of the plumage is a light burnt-umber, spotted with whitish, paler on the head and upper part of the neck; the lower part of the breast and belly are whitish, the feathers of the former being banded with brown; the inferior tail-coverts are white immaculate. The wings are darker than the body, the feathers being much spotted and banded with whitish; the primaries are five or six banded, each band being more or less widely interrupted near the shaft,

* Should they prove to be different species, new appellations must be given; and, as that of *Strix cunicularia* will, by right of priority, be exclusively retained for the Coquimbo owl, we would propose for the present bird the name of *Strix hypugæa*.

and margined with blackish, which colour predominates towards the tip; the extreme tip is dull whitish; the shafts are brown above and white beneath; the exterior primary is finely serrated, and equal in length to the fifth, the second and fourth being hardly shorter than the third, which is the longest. The tail is very short, slightly rounded, having its feathers of the same colour as the primaries, and, like them, five or six banded, but more purely white at tip. The feet are dusky, and remarkably granulated, extending, when stretched backwards, an inch and a half beyond the tail; the tarsi are slender, much elongated, covered before and on each side with loose webbed feathers, which are more thickly set near the base, and become less crowded towards the toes, where they assume the form of short bristles; those on the toes being altogether setaceous, and rather scattered. The lobes beneath the toes are large and much granulated; the nails are black and rather small, the posterior one having no groove beneath.

The individual we have described is a male, and no difference is observable in several other specimens: the female differs in nothing except that her eyes are of a pale yellow colour.

BONAPARTE'S
AMERICAN ORNITHOLOGY.

ORDER II.

PASSERES, LINNÆUS.

GENUS III.—*PICUS*.

5 *PICUS VARIUS*, BONAPARTE

YOUNG YELLOW-BELLIED WOODPECKER.

BONAPARTE, PLATE VIII. FIG. I, II.

As Wilson's history of this well known woodpecker is complete, and his description obviously discriminates the sexes and young, we shall refer the reader entirely to him for information on these points. The present bird is introduced on account of anomalous plumage; for, although the colour of the head is but slightly advanced towards its red tint, having only two or three reddish points visible on the forehead, yet the patch on the breast is quite as obvious as it is found in the adult state. In young birds of the first and second years, this patch is usually obsolete, the breast being chiefly dusky gray, although the crown is entirely red.

This specimen, possibly exhibiting one of the periodical states of plumage of this changeable bird, is the only one we have been able to procure amongst a great number of the young of both sexes in the ordinary dress. The well marked patch on the breast might induce the belief that this individual is an adult female, and that this sex, as several writers have erroneously remarked, is destitute of the red crown; but, in addition to the fact that our specimen proved, on dissection, to be a male, we obtained, almost every day during the month of November, young birds of both sexes with the crown entirely red, or more or less sprinkled with that colour, the intermixture arising altogether from age or advanced plumage, and not from sex. We are unable to state, with any degree of certainty, at what period the bird

assumes the present plumage, and we rather incline to the opinion that it is an accidental variety.

Vieillot's figure represents the young before the first moult, when, like our anomalous specimen, they have no red on the crown, differing, however, in not having the head of a glossy black, but of a dull yellowish gray, and the patch on the breast also of a dull gray tint.

6. *PICUS TRIDACTYLUS*, LINNÆUS.

NORTHERN THREE TOED WOODPECKER.

BONAPARTE, PLATE XIV. FIG. II.

THIS species is one of those which, from their habitation being in the extreme north, have a wide range round the globe. It is in fact met with throughout northern Asia and Europe, from Kamtschatka to the most eastern coasts of the old continent; and in America, is very common at Hudson's Bay, Severn River, Fort William on Lake Superior, and throughout the north-west, in hilly and wooded tracts. In the United States it is only a rare and occasional winter visitant, never having been received by us, except from the northern territory of the State of Maine. The species, contrary to what is observed of most other arctic birds, does not appear to extend so far south comparatively as in Europe, though it is not improbable that on this continent it may also inhabit some unexplored mountainous districts resembling the wild regions where only it is found in Europe. In both continents, the species affects deep forests among mountains, the hilly countries of northern Asia and Europe, and the very lofty chains of central Europe, whose elevation compensates for their more southern latitude. It is exceedingly common in Siberia, is abundant in Norway, Lapland, and Dalecarlia, among the gorges of Switzerland and the Tyrol, especially in forests of pines. It is not uncommon in the Canton of Berne, in the forests near Interlaken, though very rare in Germany, and the more temperate parts of Europe. It is well known even to breed in Switzerland, and

deposits, in holes formed in pine trees, four or five eggs of a brilliant whiteness; its voice and habits are precisely the same as those of the spotted woodpeckers. Its food consists of insects and their larvæ, and eggs, and sometimes seeds and berries. It is easily decoyed by imitating its voice.

This species is eminently distinguished among the North American and European woodpeckers, by having only three toes, the inner hind toe being wanting, besides which it has other striking peculiarities, its bill being remarkably broad, and flattened, and its tarsi covered with feathers half their length: the tongue is, moreover, not cylindrical, but flat and serrated at the point, which conformation we have, however, observed in the three European spotted woodpeckers, and in the American, *Picus varius*, *villosus*, *pubescens*, and *querulus*. In all these species the tongue is flat, with the margins projecting each side and serrated backwards, plain above, convex beneath, and acute at the tip.

Linné, Brisson, and other anterior writers, confounded this northern bird with a tropical species, the southern three-toed woodpecker, *Picus undulatus* of Vieillot, which inhabits Guiana, and, though very rarely, Central America, but never so far north as the United States. It is the southern species of which Brisson has given us the description, while Linné described the present. It is nevertheless probable that he had the other in view when he observes, that in European specimens the crown was yellow, and in the American red, though, as he states, from Hudson's Bay. The latter mistake was corrected by Latham, who, however, continued to consider the southern as no more than a variety, in which he was mistaken, since they are widely distinct; but as he had no opportunity of seeing specimens, he is not to be censured, especially as he directed the attention of naturalists to the subject. The merit of firmly establishing the two species is, we believe, due to Vieillot. Besides several other traits, the northern bird is always to be distinguished in every state of plumage from its southern analogue, by that curious character

whence Vieillot took his highly characteristic name, (*Picus hirsutus*, *Pic à pieds vêtus*,) the feathered tarsi, a peculiarity which this alone possesses to the same extent. The plumage is an uniform black above in the adult, with the top of the head yellow in the male, while the southern, whose tarsi are naked, is black undulated with white, the male having the sinciput red. It is worthy of remark, that the three-toed group found in arctic and in tropical America, should have no representative in the intermediate countries.

Although these are the only three-toed woodpeckers noted as such in the books, several others are known to exist, some of which, long since discovered, have through inadvertence, or want of proper discrimination, been placed among the four-toed species. The three-toed woodpeckers have been formed into a separate genus, a distinction to which they might indeed be considered entitled, if they all possessed the other characters of the present; but, besides that this character appears to be insulated, and of secondary importance, (since all forms of the bill known among the four-toed species are met with among the three-toed, which ought, therefore, to make as many groups as there are forms, instead of a single one,) the naturalist is perplexed by the anomalous species that inhabit India, of which one has only a stump destitute of nail, and another merely a very small nail without the toe, and, as if nature took delight in such slow and gradual transitions, two others furnished with both toe and nail, have the toe exceedingly short, and the nail extremely small! This serves to demonstrate that *Picus*, like other natural groups, admits of subdivision. These, however, ought not to be separations; and the genus has been left comparatively untouched by the great innovators of our day, who have only established three genera from it. The first of these, *Colaptes*, of which *P. auratus* of North America may be considered the type, comprises the species that have four toes, and slightly curved bills, forming the passage to *Cuculus*; another, for which the name of *Picus* is retained, includes the four-toed species with straight

bills, and the third for the three-toed species indiscriminately. The only foreign three-toed species in our collection, the beautiful *Picus Bengalis* of authors, (*Picus tiga* of Horsfield,) widely spread through tropical Asia and the adjacent islands, and, though long since known, always ranked as four-toed, has the bill precisely similar to the four-toed species, being even remarkably compressed, and very sharp on the ridge.

The male northern three-toed woodpecker is ten inches long, and sixteen in extent; the bill measures one inch and a quarter, is of a blackish lead colour, bluish white at the base of the lower mandible; it is very broad at base, cuneiform and obtuse at tip, and much depressed throughout, the ridge being very much flattened: both mandibles are perfectly straight; the upper pentagonal, the lower obtusely trigonal; the tongue is somewhat shorter than that of other species of the genus; the bristly feathers at the base of the bill are very thick and long, a provision which Nature has made for most arctic birds; in this they measure half an inch, and are blackish, white at base, somewhat mixed with reddish white; the irides are bluish black; the whole head and neck above and on the sides, back, rump, scapulars, smaller wing and tail-coverts, constituting the whole upper surface of the bird, of an uniform, deep, glossy black, changing somewhat to green and purple, according to the incidence of light; the feathers of the front are tipped with white, producing elegant dots of that colour (which perhaps disappear with age;) the crown of the head is ornamented with a beautiful oblong spot one inch in length, and more than half an inch broad, of a bright silky golden yellow, faintly tinged with orange, and the feathers in this place very fine, and somewhat rigid; they are black at their base, and marked with white at the limits of the two colours; the base of the plumage elsewhere is uniformly plumbeous ash: each side, from the corner of the mouth, arises a broad white line, forming a white space before the eye, prolonged on the neck; beneath this there is a black one, which, passing from the base of the lower mandible,

joins the mass of black of the body; a tuft of setaceous white feathers advances far upon the bill beneath; the throat, breast, middle of the belly, and tips of the under tail-coverts, are pure white; the sides of the breast, flanks broadly, and base of the tail-coverts, and even of some of the belly feathers, are thickly waved with lines of black and white, as well as the femoral and short tarsal feathers: in very old birds these parts are considerably less undulated, being of a much purer white; the wings are five inches long, reaching two-thirds the length of the tail; the spurious feather is exceedingly short, the first primary hardly longer than the seventh; and the four following subequal and longest; the smaller wing-coverts, as mentioned, glossy black: all the other upper coverts, as well as the quills, are of a dull black, the primaries being somewhat duller; these are regularly marked on both webs with square white spots, larger on the inner webs, and as they approach the base; the secondaries are merely spotted on the inner vane, the spots taking the appearance of bands; the tips of all the quills are unspotted, the lower wing-coverts are waved with black and white, similar to the flanks; the tail is four inches long, of the shape usual in the woodpeckers, and composed of twelve feathers, of which the four middle, longest, and very robust and acute, are plain deep black, the next on each side is also very acute, and black at base, cream white at the point, obliquely and irregularly tipped with black; the two next to these are cream white to the tip, banded with black on the inner vane at base, the more exterior being much purer white and somewhat rounded; the exterior of all is very short and rounded, and banded throughout with black and pure white: the tarsus is seven-eighths of an inch long, feathered in front for nearly half its length, and, with the toes and nails, dark plumbeous; the nails are much curved and acute, the hind one being the largest.

The above is a minute description of our finest male specimen, with which all those we have examined coincide more or less. By comparing, however, this

description with the detailed ones found in some works, we must conclude that the species is subject to variations in size and plumage, which, according to the erroneous impression given by authors, could not be satisfactorily accounted for by difference of sex, age, or locality: thus in some specimens the cervix is described white, or partly whitish, instead of being wholly black: the back is also said to be waved with white; which is indeed the case, and with the cervix also, but only in young birds. There is a circumstance, however, that could not be explained by supposing a difference of age, for while some specimens are seen with no appearance of white or yellow on the crown, but having that part, as well as the body, rich shining black, others with a good deal of lemon yellow on that part, are of a duller black, much varied with white. As in other doubtful and intricate cases, these obscurities are dissipated by a close inspection and unprejudiced observation of nature, and we feel much gratification in being enabled to unveil to ornithologists the mystery of these diversities of plumage in this species, by merely pointing out the sexual differences, as well as those originating in the gradual change from youth to maturity in both sexes; which, when understood, will not be found more extraordinary than in other species.

The adult female has never been recognized by any author, nor, hitherto, even by ourselves, having been misled by others in taking the young for her; and this we have only discovered by inspecting a great many specimens. She is precisely similar to the male, even in the minutest particulars, excepting the absence of yellow on the head, this part being of a rich and glossy black.

The young of both sexes are of a dull blackish; the setaceous feathers of the nostrils are grayish, somewhat tinged with rusty; all the feathers of the crown are tipped with white, constituting thick dots on that part, to which they give a silvery appearance; the cheek bands are obscure and much narrower; the cervix is more or less varied with white, and the feathers of the back

being banded with white, gives to that part a waved appearance; the under parts are more thickly waved with black: six, instead of four, of the middle tail-feathers, are almost wholly black, the outer of the six having only two or three whitish spots on the outer web. The remaining parts, with due allowance, are similar to the adult.

The young male gradually assumes the yellow, which is at first but little extended, and of a pale lemon colour, through which are yet for some time seen the white dots attributed to the female. She indeed has them very conspicuous in youth, as they are not confounded with any yellow, but loses them entirely as she advances to the adult state.

7. *PICUS ERYTHROCEPHALUS*, LINNÆUS.

YOUNG RED-HEADED WOODPECKER.

BONAPARTE, PLATE XIV. FIG. III.

WE have nothing to add to Wilson's excellent account of the manners of this very common species, and, therefore, shall limit ourselves to the description of the young.

The young red-headed woodpecker is nine and a half inches long, and seventeen inches in extent. The bill is short and robust, being but one-eighth more than an inch in length; the upper mandible has the ridge slightly curved; the bill is horn colour, whitish at base beneath; the setaceous feathers covering the nostrils are very short, and not thick, rufous gray, tipped with black; the whole head, neck, and upper parts of the breast, (which are red in the adult) are blackish, each feather broadly edged with whitish, giving the throat the appearance of being whitish, streaked with blackish; the auriculars are plain dusky black; from the breast beneath all is dingy white, the feathers of the breast and lower tail-coverts having dusky shafts; the back and scapulars are black, the feathers being margined with whitish gray; the rump and upper tail-coverts pure white; the wings are five

inches and a half long; the spurious feather very short, the first primary subequal to the fifth, the second to the fourth, the third being longest; the smaller wing-coverts are uniform with the back; the larger are of a deeper black, and tipped with pure white; the spurious wing is wholly deep black; the under wing-coverts are pure white, blackish along the margin of the wing; the primaries are plain black, tipped and edged externally with whitish; the secondaries are white, shafted with black, and with an acuminate, broad, subterminal band, which, running from one to the other, takes a zigzag appearance; the tail is four inches long, and, like those of all the woodpeckers we have examined, composed of twelve feathers, of which the outer on each side is extremely short and inconspicuous, and pure white, with a black shaft. All the others, which are very acute, longer, and more acuminate, and stiffer as they approach the centre, are black, and, except the two middle ones, slightly whitish each side of the shaft at tip, the outer being also of that colour on its outer margin. The feet are dark plumbeous, the tarsus being seven-eighths of an inch long, and feathered for a short space in front.

The young of both sexes are, no less than the adult, perfectly alike; as they advance in age, the margins of the feathers disappear, and the black becomes deep and glossy, and all the colours much purer; the scarlet of the head comes on very gradually, so that specimens are found with merely a reddish tinge, and generally with a few dots on the hind neck. No such mark appears at first.

In the adult, the whole head, neck, and breast, are bright and deep scarlet, with the feathers black at base; the back, scapulars, and smaller wing-coverts, are rich glossy black; the rump, upper tail-coverts, and from the breast beneath, white, the bottom of the plumage being plumbeous, and the tail-coverts with blackish shafts; the wings and tail are black; the lower wing-coverts pure white, with the margin of the wing deep black; the secondaries are white, shafted to near the

tip with black; the last of the primaries being also white at tip, and on the greater part of the base of the outer vane; the small lanceolate outer feather is white, black on the shaft and base of the inner vane; the two next only being tipped with white, the outer of which is also white on the exterior margin.

GENUS IV. — *ICTERUS*, BRISSON.

8. *ICTERUS ICTEROCEPHALUS*, LINNÆUS.

YELLOW-HEADED TROOPIAL, BONAPARTE, ALSO THE YELLOW-HEADED BLACKBIRD OF BONAPARTE.

BONAPARTE, PLATE III. FIG. I. MALE; FIG. II. FEMALE.

ALTHOUGH this species has long been known to naturalists as an inhabitant of South America, and its name introduced into all their works, yet they have given us no other information concerning it, than that it is black, with a yellow head and neck. It was added to the fauna of the United States by the expedition of Major Long to the Rocky Mountains.

The female has been hitherto entirely unknown, and all the figures yet given of the male extremely imperfect, from the circumstance of their having been drawn from wretchedly stuffed specimens. The figures published by Edwards and Buffon approach the nearest to the real magnitude; but they are mere masses of black, surmounted by a yellow cap: those of Brisson and others, are considerably smaller.

As that striking character, the white spot on the wing, is neither indicated in the figure nor description of any author, we might have been induced to believe, that our species is different from the South American, if a close comparison of the two had not proved their identity. Another circumstance might have been equally deceptive: Brisson, who gave the first account of this bird, from a Cayenne specimen sent to Reaumur's Museum, and who seems to have been copied by all subsequent authors, states its length to be less than seven inches, a size considerably inferior to that of the living bird. Had this admeasurement been taken from

a recent specimen, we could hardly hesitate to believe our bird distinct; but as he had only a dried skin, and as Buffon's figure represents a nearer approach to the size of nature, we conclude that Brisson's estimate is not to be implicitly relied upon. Vieillot, who never saw the bird, states the length to be six inches and a half, and refers it to his genus *Pendulinus*, but it certainly belongs to his genus *Agelaius*.

The male yellow-headed troopial is ten inches and a half long. The bill is dark horn colour, and formed exactly like that of the red-winged troopial. The feet are black; the irides, dark brown. The whole head, neck, and breast, are brilliant orange yellow, more vivid and sericeous on the head, and terminating in a point on the belly; the feathers around the base of the bill, the chin, and a wide stripe passing from the bill through the eye, are black. The remaining parts, excepting some feathers of the belly, and some of the under tail-coverts, which are yellow at base, are glossy black, very slightly tinged with brownish. Some of the exterior wing-coverts are pure white, with black tips, constituting two very remarkable white spots on the wing, the larger of which is formed by the greater coverts of the primaries, and the smaller one by the middling coverts. The first, second, and third primaries, are longest and equal. The tail is four inches long, slightly rounded, the two middle feathers being somewhat shorter than those immediately adjoining. This character Wilson remarked in the red-winged troopial; and, as other notable traits are common to both species, we must regard them, not only as congeneric, but as very closely allied species of the same subgenus. They differ, however, in colour, and the yellow-headed troopial is larger, having the bill, feet, and claws consequently stronger, and the first primary longer than the second and third, or at least as long; whereas, in the red-winged, the third is the longest.

The female of our troopial is eight inches and a quarter long, a size remarkably inferior to that of the male, and exactly corresponding with the difference

existing between the sexes of the red-winged troopial. The bill and feet are proportionally smaller than those of the male, the feet being blackish; the irides are dark brown. The general colour is uniform dark brown, a shade lighter on the margin of each feather. The frontlet is grayish ferruginous, as well as a line over the eye, confluent on the auricles, with a broad line of the same colour passing beneath the eye, including a blackish space varied with grayish. An abbreviated blackish line proceeds from each side of the lower mandible; the chin and throat are whitish; on the breast is a large rounded patch, of a pretty vivid yellow, occupying nearly all its surface, and extending a little on the neck. On the lower part of the breast, and beginning of the belly, the feathers are skirted with white. The form of the wings and tail is the same as in the male; the wings are immaculate.

The young of this species are very similar to the female; the young male gradually changing to the rich adult covering.

The yellow-headed troopials assemble in dense flocks, which, in all their varied movements and evolutions, present appearances similar to those of the red-winged, which have been so well described by Wilson. They are much on the ground, like the cow troopial, (cow bunting of Wilson;) on dissection, their stomachs have been found filled with fragments of small insects, which seem to constitute their chief food, though doubtless they also feed on vegetable substances. Their notes resemble those of the red-winged troopial, but are more musical. The range of the yellow-headed troopial is very extensive, as it is found from Cayenne to the river Missouri; although it passes far north in the western region, yet it does not visit the settled parts of the United States.

We adopt the genus *Icterus*, nearly as it was established by Brisson, and accepted by Daudin and Temminck. Authors have variously estimated this genus, both in regard to its denomination and limits. One of Wilson's most important nomenclatural errors

consisted in placing one of the species under the genus *Sturnus*, with which it has but little similarity, if we except some of its habits, and particularly its gregarious disposition. Linné considered these birds as *Orioli*, in which he was followed by Gmelin and Latham, notwithstanding the remarkable difference existing between them and the *Oriolus galbula* of Europe, the type of that genus. Illiger, and some other naturalists, considering that bird a *Coracias*, appropriated the name of *Oriolus* to our *Icterus*, and separated from it the largest species, which he called *Cassici*. Linné had declared all generic names previously given to arts, diseases, &c. to be inadmissible in natural history; Illiger, on that principle, altogether rejected the name *Icterus*, as being preoccupied by a disease. This may account for the introduction of new names for genera, one of which at least ought to have retained its first appellation. Vieillot, however, would have caused less confusion, if he had adopted the name of *Icterus*, (which, with *Saxicola*, and all other names of that class, we do not think objectionable,) instead of *Agelaius*, *Pendulinus*, or *Yphantus*, three of his four genera corresponding to our *Icterus*. But, if the latter name was considered as utterly inadmissible, we see no reason why he did not accept that of *Xanthornus*, applied to this genus by Pallas.

All the species of troopial are peculiar to America. We divide them into four subgenera, the present bird belonging to the second, to which we apply the name of *Xanthornus*. The species of this subgenus are peculiarly social in their dispositions, and their associations are not liable to interruption from the influence of love itself. Not only do many individuals of the same family combine and labour in concert, but they also unite with very different species. Their aspect is animated, and their movements are quick, bold, and vigorous; they fly rapidly, at a good height, and are much attached to the places of their birth. Their song is a kind of whistling; they walk with the body nearly erect, with a slightly hurried step, and are seen sitting

on the ground, or perched on the branches of trees. They seek no concealment, and never enter the woods, though they are very careful to construct their nests in a safe situation. The troopials eat no fruits, but derive their subsistence from insects, worms, grains, and small seeds. They leave the temperate climates at the approach of winter, and are amongst the first birds of passage that return with the spring.

GENUS V. — *QUISCALUS MAJOR*, VIEILLON

9. *QUISCALUS MAJOR*, VIFILLOT.

GREAT CROW BLACKBIRD, BONAPARTE.

BONAPARTE, PLATE IV. FIG. I. MALE ; FIG. II. FEMALE.

EDINBURGH COLLEGE MUSEUM.

No part of natural history has been more confused than that relating to North and South American birds of black plumage ; which is by no means surprising, when we recollect that they are chiefly destitute of coloured markings, and that the greater number of admitted species, are founded on the short and inexact descriptions of travellers, who have neglected to observe their forms, habits, and characters. But little aid has been derived from the wretched plates hitherto given, for they seem better suited to increase the confusion than to exemplify the descriptions to which they are annexed, and every succeeding compiler has aggravated, rather than diminished this complication of error. It is, therefore, solely by a studious attention to nature, that we can extricate these species from the uncertainty involving them, and place them in a distinct and cognizable situation.

Wilson having mentioned this species in his catalogue of land birds, evidently intended to describe and figure it ; but this he deferred, probably, in expectation of obtaining better opportunities of examination, which are not so readily presented, as the bird does not inhabit this section of the United States.

It would be difficult to ascertain whether or not Linné and Latham have mentioned this bird in any

part of their works, but the reader may perceive our opinion on this point by referring to our synonyms, which, however, are given with much doubt, since we do not hesitate to say, that those authors have not published any satisfactory description of this species.

We shall not endeavour to settle the question relative to the species inhabiting South America, or even Mexico and the West Indies; but we may assert, that this is the only blackbird found in the United States, besides those of Wilson, which, as is the case with all that his pencil or pen has touched, are established incontestably; he may occasionally have been mistaken as to his genera, or incorrect in a specific name, but by the plate, description, and history, he has always determined his bird so obviously, as to defy criticism, and prevent future mistake.

Mr Ord has published an excellent paper in the *Journal of the Academy of Natural Sciences*, proving the existence, in the United States, of two allied species of crow blackbird, in which he gives new descriptions, indicates stable characters, and adds an account of their respective habits; but in attempting to correct Wilson, he has unfortunately misapplied the names. In this instance, he should not have charged Wilson with error, who is certainly correct in regard to the species he published; and even had this been doubtful, he who so well described and figured the common crow blackbird, ought to have been followed by ornithologists. Therefore, notwithstanding Mr Ord's decision, we consider the *quiscala* of Wilson unquestionably the true *quiscala* of authors. This is so obvious, that it is unnecessary to adduce any evidence in support of our opinion, which, indeed, is sufficiently afforded by Mr Ord's paper itself.

It is impossible to decide with certainty, what bird authors intended to designate by their *Gracula barita*; but after a careful review of the short and unessential indications, respective synonyms, and *habitat*, given by different writers, we feel assured that they have not referred to one and the same species. Thus, the *barita*

of Linné is a species not found in the United States, but common in the West Indies, called *Icterus niger* by Brisson, and afterwards *Oriolus niger* by Gmelin and Latham; the *barita* of Latham, his boat-tailed grackle, is evidently the same with the *quiscala*; * Gmelin's *barita* is taken partly from that of Linné, and partly from the boat-tailed grackle of Latham, being compounded from both species; we shall not be at the trouble of deciphering the errors of subsequent compilers.

Ornithologists are all at variance as to the classification of these species. Linné and Latham improperly referred them to *Gracula*; Daudin, with no better reason, placed them under *Sturnus*; Temminck considers them as *Icteri*, Cuvier as *Cassica*, and Vieillot has formed a new genus for their reception. I have no hesitation in agreeing with the latter author, and adopt his name of *Quiscalus*; but I add to the genus, as constituted by him, the *Gracula ferruginea*, which he regarded as a *Pendulinus*, and which other authors have arranged in several different genera, making of it a profusion of nominal species. Wilson judiciously included that species in the same genus with those above mentioned, although other authors had placed it in *Turdus*, *Oriolus*, &c.

The genus *Quiscalus* is peculiar to America, and is composed of four well ascertained species, three of which are found in the United States; these are, *Quiscalus major*, † *versicolor*, and *ferrugineus*; the fourth, *Quiscalus baritus*, inhabits the West Indies, and probably South America.

The species of this genus are gregarious, and omnivorous; their food being composed of insects, corn,

* It was probably by Latham, that Mr Ord was led to misapply the names of the two species; for, perceiving that the *barita* of that author was the *quiscala*, he inferred, that the *quiscala* was the *barita*.

† We call the present species *Quiscalus major*, agreeably to Vieillot, who certainly intended this bird, although his description is a mere indication.

and small grains, thus assisting and plundering the agriculturist at the same time. When the first European settlements were formed in North America, the havoc made by these birds and the troopials in the grain fields, was so great, that a premium was given for their heads. Their destruction was easily effected, as they are not shy, and are more easily approached as their numbers decrease; but the evil which resulted from exterminating so many of these birds, was as unexpected as irremediable. The corn and pastures were so devoured by worms and insects, that the inhabitants were obliged to spare the birds, in order to avert a scourge which had been previously unknown. As population increases, and a greater quantity of grain is cultivated, the ravages of these birds become less perceptible, and the injury they cause comparatively trifling.

The great crow blackbird is more than sixteen inches long, and twenty-two in extent. The bill, from the angle of the mouth, is one inch and three quarters, and its colour, like that of the feet, is black; the roof of the mouth is furnished with a slight osseous carina; the irides are pale yellow. The general appearance of the bird is black; the whole head and neck having bluish purple reflections; the interscapular region, breast, belly, sides, and smaller wing-coverts, are glossy steel blue; the back, rump, and middling wing-coverts, are glossed with copper green; the vent, inferior tail-coverts, and thighs, are plain black. The undescribed parts of the wings are deep black, slightly glossed with green, as well as the tail, which is cuneiform, capable of assuming a boat-shaped appearance, and measures nearly eight inches in length from its insertion, surpassing the tip of the wings by five inches.

The female is considerably shorter, measuring only twelve and a half inches in length, and seventeen inches and a half in extent. The bill, from the angle of the mouth, is one inch and a half long, and, with the feet, is black; the irides are of a still paler yellow than those of the male. The head and neck above are light brown, gradually passing into dusky towards the back, which,

with the scapulars and lesser wing-coverts, has slight greenish reflections; a whitish line passes from the nostrils over the eye, to the origin of the neck. The chin, throat, and breast, are dull whitish; the anterior part of the breast is slightly tinged with brownish; the flanks are brownish; the belly brownish white; and the vent and inferior tail-coverts are blackish brown, each feather being margined with pale. The remaining parts are of a dull brownish black, slightly glossed with greenish; the secondaries, tail-coverts, and tail feathers, having a slight banded appearance, which is equally observable in the male.

The young at first resemble the female, but have the irides brown, and the males gradually acquire the brilliant plumage of the adult.

The great and common crow blackbirds are both alike distinguished by the very remarkable boat-like form of the tail, but the great difference of size, appearance of the females, length of the tail, prominence of the osseus carina, and brilliancy of colouring, most obviously prove them to be altogether specifically distinct.

The great crow blackbird inhabits the southern part of the Union, where it is called jackdaw; Georgia and Florida appear to be its favourite residence. The disposition of this species is extremely social, and they frequently mingle with the common crow blackbird; vast flocks are seen among the sea islands and neighbouring marshes on the main land, where they feed at low water, on the oyster beds and sand flats.

The chuck of our species is shriller than that of the common crow blackbird, and it has other notes which resemble the noise made by a watchman's rattle; their song is only heard in the spring, and though the concert they make is somewhat melancholy, it is not altogether disagreeable. Their nests are built in company, on reeds and bushes, in the neighbourhood of marshes and ponds; they lay about five eggs, which are whitish, spotted with dark brown.

Mr Ord mentions in his paper, that the first specimens

he saw of this bird, were obtained on the 22d of January at Ossabaw Island, when but a few males were seen scattered over the cotton plantations. Advancing towards the south, they became more numerous; and in the early part of February, the males, unaccompanied by females, were common near the mouth of the river St Juan in Florida. A few days after, the females appeared, and associated by themselves on the borders of fresh water ponds; they were very gentle, and allowed themselves to be approached within a few feet, without becoming alarmed. Flocks composed of both sexes were seen about the middle of March.

About the latter end of November, they leave even the warm region of Florida, to seek winter quarters farther south, probably in the West Indies. Previous to their departure, they assemble in very large flocks, and detachments are seen every morning moving southward, flying at a great height. The males appear to migrate later than the females, as not more than one female (easily distinguishable, even in the higher regions of the air, by its much smaller size) is observed for a hundred males, in the last flocks.

The great crow blackbird is also very numerous in the West Indies, Mexico, and Louisiana; but it does not frequent the Northern, or even the Middle States, like the common crow blackbird. Our opinion, that the *Corvus Mexicanus* of authors is the male of this species, and their *Corvus zanoë* the female, is corroborated by the male and female great crow blackbird being seen in separate flocks.

10. *QUISCALUS VERSICOLOR*, VIEILL.

FEMALE COMMON CROW-BLACKBIRD, BONAPARTE.

BONAPARTE, PLATF V. FIG. I.

THE specific name of this bird (*quiscala*) has been changed, in consequence of its having been applied to the genus: we have substituted the name given by Vieillot, which is admirably appropriate. The English

name employed by Wilson being now rendered inadmissible by the generic change, we have thought proper to adopt a local appellation.

The female common crow blackbird is eleven inches in length, and sixteen and a half in extent. The bill is nearly an inch and a half long, and, as well as the feet, black; the irides are yellowish white; the whole head, neck, and upper part of the breast, are blackish, with steel blue, green and violet reflections, which are not so vivid as in the male. The general colour of the body, wings, and tail, is deep sooty brown; the feathers of the back are margined with coppery and purplish; the rump, tail-coverts, and wing-coverts are glossed with purplish; the lower part of the breast and flanks have a coppery reflection; the inferior tail-coverts are obscurely glossed with violet. The tail is cuneiform, but slightly concave in flight, and is five inches long, extending two and a half inches beyond the tip of the wings; the feathers are glossed with very obscure greenish. In the male, the tail is also cuneiform, and greatly concave, exhibiting a singular boat-shaped appearance, as in the preceding species, and even more remarkably so, according to Mr Ord, which induced him to change the name.

We shall not attempt to make any additions to the almost complete, and very excellent history of this species, given by Wilson: but as the four species of *quiscalus* are liable to be confounded, we shall proceed to give a few comparative observations, that the student may be enabled to distinguish them from each other.

Amongst other remarkable traits, the *Quiscalus ferrugineus* is at once known in all its various states, by its even tail, and comparatively smaller bill, which somewhat resembles that of a thrush. In addition to the characters drawn from its dimensions, the *Quiscalus versicolor* can always be distinguished from its congeners, by the slight difference in size and colour between the sexes; while, in the other species, the males and females are remarkably dissimilar: the mouth of this species is, moreover, armed with a prominent osseous carina, a

quarter of an inch long, which, in the others, is much smaller. That the *Quiscalus major*, and *Quiscalus baritus* should have been confounded together, is not a little surprising, as the former is sixteen inches long, the tail being eight inches, and extending five inches beyond the tip of the wings; whilst the latter is only ten inches, the tail much less cuneiform, four inches and a half long, and extending but two inches beyond the tip of the wings; the osseous carina is similar in these two species, and the markings of the females are much alike. From this statement, it is apparent, that the females of the largest and smallest crow blackbirds correspond in the disposition of their colours; a parity that does not exist in the intermediate species. In comparative size, however, they differ considerably: the female of the *baritus*, though smaller, as we have already stated, is, in proportion to its mate, considerably larger than that of the other, being only half an inch, whilst the female of the *major* is nearly four inches, smaller.

These birds, as we have had occasion personally to observe, like most of the feathered tribes, are subject to become either wholly or partially albinos. From this circumstance, numerous errors have been introduced in the pages of ornithological works.

GENUS VI.—*GARRULUS*, VIEILL.

11. *GARRULUS STELLERI*, LATHAM. — STELLER'S JAY, BONAP.

BONAPARTE, PLATE XIII. FIG. 1.

To the enlightened liberality and zeal for science of that distinguished collector, Mr Leadbeater, of London, the American public, are indebted for the appearance of the first figure ever given of this handsome jay. Trusting his precious specimens twice to the mercy of the waves, he confided to us this, together with several other still more rare and valuable North American birds, which no consideration would have

induced him to part with entirely, to have them drawn, engraved, and published on this side of the Atlantic. It is the frequent exercise of similar disinterestedness in the promotion of scientific objects, that has procured for Mr Leadbeater the distinction with which he is daily honoured by learned bodies and individuals.

The Steller's jay is one of those obsolete species alluded to in the preface to this volume. It is mentioned by Pallas as having been shot by Steller, when Behring's crew landed upon the coast of America. It was first described by Latham from a specimen in Sir Joseph Banks's collection from Nootka Sound, and on his authority has been admitted into all subsequent compilations. The species is indeed too well characterized to be doubted, and appears moreover to have been known to Temminck, as it is cited by him as a true jay in his *Analysis of a General System*. Nevertheless, adhering strictly to our plan of not admitting into the Ornithology of the United States any but such as we had personally examined, we did not include this species either in our Catalogue, or Synopsis, of the birds of this country; and it is but recently that Mr Leadbeater's specimen has enabled us to add it to our list.

In elevating our subgenus *Garrulus* to the rank of a genus, we merely conform to the dictates of nature; in this instance coinciding with Temminck, whose intention it is, as he informs us, to include in it the jays and magpies, leaving the name of *Corvus* for those species which are distinguished by their black plumage, and short and even tails. These birds are on every account well worthy of this distinction, and we cheerfully adopt an arrangement which we deem consonant with nature: but we cannot agree to the change of termination (*Garrula*) which he has attempted to introduce, under the pretence that his genus is more extensive than the genus *Garrulus* of former authors. That genus was, in fact, formed by Brisson, and afterwards by Linné, united with *Corvus*. This latter genus of Linné certainly contained within itself the constituents of several

very natural genera ; but the additions made to it by Gmelin and Latham rendered it an utter chaos, where every new species with a stout bill took its place, in defiance of the genuine characters. Under such circumstances the task of the ornithologist, who professed to be guided by philosophical principles was, doubtless, not merely to subdivide, but to make an entire reformation. Illiger, with his usual judgment, perceived the evil, and attempted its remedy ; but his genus was still too extensive, and, besides, was not natural, as it included the wax-wings, a very distinct genus, that had always been forced into others. The only advantage it possessed over that of Latham was, that all the species it comprised exhibited its artificial characters. As restricted by Brisson, Vieillot, and lately adopted by Temminck, by whom it was previously much limited, it is perfectly natural ; though we cannot help remarking that some even of the eighteen species enumerated by the latter in his article on the generalities of the crows, in the *Planches Coloriées*, may again be separated, such as *Corvus Columbianus*, Wils., which ought, perhaps, to constitute a genus by itself. Vieillot, and other recent writers on ornithology, have long since adopted the genus *Garrulus* as distinct even from *Pica*, though we prefer retaining the latter merely as a subgenus of *Garrulus*, since it is absolutely impossible to draw the line of separation between them without resorting to minute and complicated distinctions.

The jays and magpies, in fact, require to be distinguished from the crows, as a genus, on account of their form, colour, habits, and even their osseous structure. Their upper mandible, somewhat inflected at tip, and the navicular shape of the lower, afford obvious characteristic marks. Their wings, too, are rather short, and do not reach by a considerable space to the tip of the tail, which is long, and more or less rounded, sometimes greatly wedge-shaped. On the contrary, the crows have long wings, reaching almost or quite to the extremity of the tail, which is short, and even at tip. The identity in the shape of the wings and tail, and

even the colours of their plumage, which agree in all the species, and in different climates, render the crows a very natural and well marked group. The black plumage and offensive odour, which cause them to be viewed every where with disgust, and even somewhat of superstitious dread, are far from being characteristics of the neat and elegant jays.

The true *corvi* are distinguished by the following traits: Bill, very stout; feet, very strong; general form, robust; flight, highly sustained, straight, or circular, as if performing evolutions in the air. They live, travel, and breed in large bands; affect wide plains and cultivated grounds, only retiring to the adjacent forests to roost, and are always seen on high and naked trees, but never on thickets, shrubs, or bushes. Their voice is deep and hoarse. They are more or less fond of cattle, some species preying on the vermin that infest them. Though devouring all kinds of food, yet their propensity is decidedly carnivorous. Their black, unvaried colours, are remarkably opposed to the bright and cheerful vesture of the jays, whose plumage is of a much looser texture, the feathers being longer and much more downy.

The jays are again more particularly distinguished from the magpies by their head-feathers being long and silky, and always erectile, (especially when the bird is excited or angry) even when they are not decidedly crested, as is the case in many species. Their colours are also gayer, and more brilliant, with more or less of blue. The species of both these sections are garrulous, noisy, and inquisitive. Together with the crows, they are eminently distinguished by their stout, cultrate bill, generally covered at base with setaceous, incumbent, porrect feathers, hiding the nostrils. The female is similar to the male in appearance, and the young differ but little, and only during the first year, from the adult. They are very shy, suspicious, possessed of an acute sense of smelling, and evince great sagacity in avoiding snares. They are omnivorous in the fullest extent of the word, feeding on grains, insects, berries, and even

flesh and eggs. When they have caught a small bird, which they can only do when feeble and sickly, or ensnared, they place it under their feet, and with their bill tear it to pieces, swallowing each piece separately. Nevertheless, they give the preference to grains or fruits. The northern species are wary and provident, collecting stores of food for the winter. They are very petulant; their motions quick and abrupt, and their sensations lively. When alarmed by the appearance of a dog, fox, or other living or dead object, they rally together by a peculiar note as if they would impose upon it by their numbers and disagreeable noise. When on the ground, they display great activity; or if on trees, they are continually leaping about from branch to branch, and hardly ever alight on dead or naked ones. They are generally met with in forests, seldom in open plains; their favourite resort is among the closest and thickest woods. Less suspicious and cunning than the crows, or even the magpies, they may be decoyed into snares and taken in great numbers, especially by imitating the voice of one of their own species in difficulties, or by forcing a captive individual to cry. They live in families, or by pairs, the greater portion of the year; and though considerable numbers may be seen travelling at once, they always keep at intervals from each other, and never in close flocks like the crows. They are easily tamed, and are susceptible of attachment; learn readily to articulate words, and imitate the cries of different animals. They have a troublesome propensity to purloin and conceal small objects not useful to themselves, and as jewels and precious metals are peculiarly apt to attract their notice, they have been the cause, when kept as pets, of serious mischief. Every one is familiar with the story of the thieving magpie, become so celebrated by the music of Rossini, and which is founded on fact.

The jays breed in woods, forests, orchards, preferring old and very shaded trees, placing their nests in the centre against the body, or at the bifurcation of large limbs. The nest is built without art, and is formed of

twigs and roots, whose capillary fibres serve as a lining inside; the eggs are from four to six. The old ones keep the food for their young in the œsophagus, whence they can bring it up when wanted. The young are born naked, and remain for a long period in the nest, being still fed for some time by the parents after they are full fledged.

Unlike the melancholy crows, which step gravely, lifting one foot after the other, the jays and magpies move about nimbly by hopping, and are constantly in motion while on the ground. Their flight is moreover neither protracted nor elevated, but merely from tree to tree, and from branch to branch, shooting straight forward at once when wishing to go any distance, now and then flapping their wings, and hovering as they descend, when about to alight. It is quite the reverse with the crows; and all these characters are of the greatest importance in the establishment of natural groups.

While the true *Corvi*, by their stout and almost hooked bill, and the carnivorous habits of some species, exhibit on the one hand the gradual passage from the vultures, and on the other by the slender-billed species, the transition to the crow blackbirds and troopials; the affinities of the jays present nice gradations to the genera already dismembered from *Corvus*, such as *Nucifraga*, *Pyrrhocorax*, *Bombycilla*, and at the same time form other links with *Lanius*, and even with *Turdus* and *Acridotheres*.

There is one remarkable analogy of the jays which we cannot pass over in silence. It is, however, singular, and hitherto unsuspected, with the titmouse (*Parus*.) Form, habits, even the peculiar looseness of texture of the plumage, all are similar in these genera, hitherto estimated so widely different. This resemblance extends even to colour in some species: it might even be asked, what else, in fact, is the Canada jay than a large titmouse; and what the crested titmouse, but a small jay? The blue colour of the typical jays predominates, moreover, in other *Pari*, and the *P. caudatus* of Europe

has also the long, cuneiform tail of some, no less than *P. bicolor* their crest.

The genus *Garrulus* has an extensive geographical range, being found in all latitudes and longitudes. It is composed of about thirty species, nearly half of which may more properly be called jays: of the latter, there are but two in Europe, and though we have doubled the number given by Wilson, we think that others will yet be discovered in the wild western tracts of this continent. There exist imperfect accounts of two or three species inhabiting the countries near the Rocky Mountains, one of which is probably that here described. and others may prove to be some of the newly discovered Mexican species, one of which, the *Garrula gubernatrix* of Temminck, is so proudly beautiful.

The Steller's jay is more than twelve inches long. The bill measures one inch and a half, is entire, and totally black; the bristly feathers over the nostrils are also wholly black. The feathers of the head are greatly elongated, forming a large crest, more than two and a half inches long, and, with the whole head and neck, entirely deep brownish black, grayish on the throat; the feathers on each side of the front are slightly tipped with bright and light azure, thus forming a dozen or more of small dots on that part: on the neck, the brown becomes lighter, and extends down on the back, occupying the scapulars as well as the inner wing-coverts; on the middle of the back the brown becomes somewhat tinged with bluish, and blends gradually into a fine bright blue colour, covering the rump and the upper tail-coverts: all the inferior parts from the neck, at the lower part of which the dusky colour passes into blue, are blue, somewhat tinged with gray, which is the general colour of the base of the plumage. The wings are nearly six inches in length; the fourth, fifth, and sixth primaries being subequal and longest. All the outer wing-coverts and the secondaries are blue, faintly crossed with obsolete blackish lines; the under wing-coverts are dusky; the primaries are dark dusky, and, with the exception of the outer ones, at tip are edged

or tinged with blue ; on the inner vane, the secondaries are blackish, but on the outer, they are deep glossy blue. The tail is five inches and a half long, and but slightly rounded ; it is of a deep glossy azure blue, more brilliant on the outer vanes of the feathers, the inner being slightly tinged with dusky ; an indication of obliterated, transverse blackish lines, may be perceived in certain lights on almost all the tail-feathers in our specimen, and we have no doubt that on others they are more marked ; the shafts both of the quills and tail-feathers are black. The tarsus is an inch and three quarters long ; the femorals, blackish, slightly mixed with bluish at the joint ; the feet and nails are entirely black.

This description is taken from an individual which was killed near the Oregon, or Columbia river. Another specimen, from Mexico, also in Mr Leadbeater's collection, exhibited greater brilliancy of plumage, being principally distinguished, as nearly as our recollection serves, by the black colour of the anterior parts being less extended, and by having more of silvery bluish (indicated in our bird) on the front, extending to the throat and eyebrows, and somewhat round the head. This, without any hesitation, we considered as a more perfect specimen, a mere variety of age, and would have had our figure made from it : but having been informed that an English ornithologist (his name and that of the species were not mentioned, or, if they were, we have forgotten them) considered it as a new Mexican species, we have preferred, notwithstanding our conviction, strictly copying the less brilliant specimen procured in the United States territory, to the more beautiful one from Mexico. The appearance of *Garrulus coronatus* of Mr Swainson, in the Synopsis before quoted, reminded us of the circumstance, and we have therefore quoted it with doubt. Our two birds agree perfectly in markings and dimensions. Of the habits of the Steller's jay, little or nothing is known. It inhabits the western territory of the United States, beyond the Rocky Mountains, extending along the western coasts of North America, at least from California to Nootka

Sound; is common on the Oregon, and found also in Mexico, on the table land, and in Central America.

It is a curious fact in ornithological geography, that of the four jays now admitted into the Fauna of the United States, while the common blue jay, the only eastern representative of the genus, spreads widely throughout the continent, the three others should be confined in their range each to a particular section of country. Thus, the Canada jay is the northern, the Florida jay is the southern, and the present the western representative of the genus. It is probable that another species at least, our *Garrulus ultramarinus*, from Mexico, will soon be admitted as the central jay. To the latter bird, Mr Swainson, who had probably not seen my paper describing it, (published more than two years ago in the *Journal of the Academy of Natural Sciences*,) gives the name of *G. sordidus*; at least, judging from his short phrase, and the dimensions and locality, they are the same.

12. *GARRULUS FLORIDANUS*, BONAPARTE. — FLORIDA JAY.

BONAPARTE, PLATE XIV. FIG. 1.

A SINGLE glance at this fine bird, and at the preceding, or Steller's jay, would suffice, better than the longest description, to shew the error committed by Latham, in quoting, in his recent work, (*General History of Birds*,) the name of this species among the synonyms of that dedicated to Steller. In fact, the large crest of that species, (of which the present is altogether destitute,) and its black head; the light brown back, and bluish collar of this — but it is needless to carry the comparison between them any farther; they are too dissimilar to suffer it, and we shall reserve pointing out differences, until required, by closely related species, of which more striking examples will not long be wanting.

Mistakes of this kind are perhaps unavoidable in a compilation of such extent as the work we have men-

tioned, and if they proceeded from a laudable desire of excluding nominal species, evinced throughout, we should refrain from censure; but when, on the contrary, we find in the same work such repeated instances of an inconsiderate multiplication of species, they cannot be too severely condemned.

Vieillot, in the case of this bird, has fallen into the contrary, and much more common, error, of making two species out of it; one from personal observation, and the other by compilation. This mistake has already been corrected by Mr Ord, in a valuable paper which he drew up on his return from Florida, where he enjoyed the advantage of studying this species in its native haunts.

“When we first entered East Florida,” says Mr Ord, “which was in the beginning of February, we saw none of these birds; and the first that we noticed were in the vicinity of St Augustine, on the 13th of the above mentioned month. We afterwards observed them daily in the thickets near the mouth of the St Juan. Hence we conjectured that the species is partially migratory. Their voice is not so agreeable as that of the *Garrulus cristatus*, or crested blue jay of the United States; they are quarrelsome, active, and noisy; and construct their nests in thickets. Their eggs I have not seen.” “The blue jay, which is so conspicuous an ornament to the groves and forests of the United States, is also common in Florida. This beautiful and sprightly bird we observed daily, in company with the mocking-bird and the cardinal grosbeak, around the rude habitations of the disheartened inhabitants, as if willing to console them amid those privations which the frequent Indian wars, and the various revolutions which their province has experienced, have compelled them to bear.” The Florida jay, however, is a resident in that country, or only removes from section to section. It is not confined to Florida, where it was first noticed by Bartram, being found also in Louisiana, and in the west extends northward to Kentucky; but along the Atlantic, not so far. In East Florida it is more abundant, being found at all

seasons in low thick covers, clumps, or bushes. They are most easily discovered in the morning about sun-rise, on the tops of young live oaks, in the close thickets of which they are found in numbers. Their notes are greatly varied, and in sound have much resemblance to those of the thrush and the blue jay, partaking a little of both. Later in the day it is more difficult to find them, as they are more silent, and not so much on the tree tops as among the bushes, which are too thickly interwoven with briars and saw-palmettos to be traversed; and unless the birds are killed on the spot, which they seldom are when struck with fine shot, it is next to impossible to come at them in such situations. This species, like its relatives, is omnivorous, but, being inferior in strength, does not attack large animals. The stomachs of our specimens contained small fragments of shells, sand, and half-digested seeds.

The blue jays, though also found in the same localities, are not so numerous; they keep more in the woods, and their note is louder.

The Florida jay is eleven and a half inches long, and nearly fourteen in extent; the bill is one inch and a quarter long, hardly notched, and of a black colour, lighter at tip; the incumbent setaceous feathers of the base are grayish blue, mixed with a few blackish bristles; the irides are hazel brown; the head and neck above, and on the sides, together with the wings and tail, are bright azure; the front, and the line over the eye, bluish white; the lores and cheeks of a duller blue, somewhat mixed with black; the back is yellowish brown, somewhat mixed with blue on the rump, the upper tail-coverts being bright azure; the inner vanes and tips of the quails are dusky, their shafts, as well as those of the tail-feathers, being black. All the lower parts are of a dirty pale yellowish gray, more intense on the belly, and paler on the throat, which is faintly streaked with cinereous, owing to the base of the plumage appearing from underneath, its feathers having blackish, bristly shafts, some of them without webs. From the cheeks and sides of the neck, the blue colour

passes down along the breast, and forms a somewhat obscure collar; the under wing and under tail-coverts are strongly tinged with blue, which colour is also slightly apparent on the femorals; the inferior surface of the wings and tail is dark silvery gray; the base of the plumage is plumbeous ash, blackish on the head; the wings are four and a half inches long, and reach, when closed, hardly beyond the coverts of the tail, which is five and a half inches long, extending beyond the wings three and a half; the spurious feather is extremely short; the first primary, (often mistaken for the second,) is as short as the secondaries; the five succeeding are subequal, the third and fourth being rather the longest. The tail is somewhat wedge-shaped, the outer feather being half an inch shorter than the next, and one inch and a half shorter than the middle one. The tarsus is an inch and a quarter long, and black, as well as the toes and nails.

The female is perfectly similar to the male, being but a trifle less in size, and quite as brilliant in plumage.

Two years since, it fell to our lot to describe, and apply the name of ultramarine jay, (*Garrulus ultramarinus*.) to a species found in Mexico, closely resembling this, and to which Mr Swainson, in his *Synopsis of Mexican Birds*, has lately given the name of *Garrulus sordidus*, his specimen being probably a young one. The principal distinctive characters may be found in its larger dimensions, but especially in the shape of its tail, which is perfectly even, and not in the least cuneiform, as it generally is in the jays. The back, though it is also somewhat intermixed with dusky, is much more blue than in our species, and indeed the whole azure colour is somewhat more brilliant and silky; the bluish collar is wanting, and the under wing, but especially the under tail-coverts, are much less tinged with blue. The wings, moreover, are proportionally larger.

GENUS VII — *BOMBYCILLA*, VIEILL13. *BOMBYCILLA GARRULA*, VIEILL. — BOHEMIAN WAXWING.

BONAPARTE, PLATE XVI. FIG. II.

IF the absurd theory advanced by Buffon, that European animals degenerate, or become more or less changed, in other climates, needed in our time any additional refutation, the discovery of this bird on the north-western territory, near the Rocky Mountains, would afford it. By appearing in its full size and perfection, exactly similar to the European individuals of its species, it would vindicate its smaller relation, the common and familiar cedar bird, from the reproach of degeneracy. But with the more enlightened opinions that now prevail, its occurrence in that unexplored portion of the globe is important chiefly as tending to solve the problem of the place of abode of this mysterious wanderer; especially as, by a singular coincidence, whilst we were proclaiming this species as American, it was received by Temminck from Japan, together with a new species, the third known of the genus, which he has caused to be figured and distinguished by the appropriate name of *Bombycilla phænoptera*, Boiè. Besides the red band across the wing, whence its name is derived, the length of its crest adorned with black feathers, and the uniform absence, in all states, of the corneous appendages of the wings, this new species, resembling more in size and shape the Carolina waxwing (cedar bird) than the present, is eminently distinguished from both by wanting the small, closely set feathers covering the nostrils, hitherto assigned as one of the characters of the genus. This example evinces the insufficiency of that character, though Illiger considered it of such importance as to induce him to unite in his great genus *Corvus*, (comprehending this as well as several other distinct groups,) all the species possessing it. It shews, especially, how erroneous it is to form two separate families for the allied genera with covered or

naked nostrils. In fact, the genus as it now stands, is, not the less for this aberration, an exceedingly natural one, though the two species that are now known to inhabit America are still more allied to each other than either of them to the Japanese, the present (Bohemian) differing chiefly by its larger size, mahogany-brown tail-coverts, and cinereous belly, the first being white, and the second yellowish, in the cedar-bird, which also wants the yellow and white markings on the wing. Of the three species now comprehended in the genus, one is peculiar to America, a second to eastern Asia, and the present common to all the Arctic world.

This small but natural group, at one time placed by Linné in the carnivorous genus *Lanius*, notwithstanding its exclusively frugivorous habits, was finally restored by him to *Ampelis*, in which he was followed by Latham. Brisson placed it in *Turdus*, and Illiger in *Corvus*. Ornithologists now concur in regarding it as a genus, disagreeing only as to the name, some calling it *Bombyciphora*, others *Bombycivora*, though they all appear to have lately united in favour of the more elegant and prior termination of *Bombycilla*.

The waxwings, which we place in our family *Sericati*, having no other representative in Europe or North America, are easily recognized by their short, turgid bill, trigonal at base, somewhat compressed and curved at tip, where both mandibles are strongly notched; their short feet, and rather long subacute wings. But their most curious trait consists in the small, flat, oblong appendages, resembling in colour and substance red sealing-wax, found at the tips of the secondaries in the adult. These appendages are merely the coloured corneous prolongation of the shafts beyond the webs of the feathers. The new species from Japan is, as we have mentioned, at all times without them, as well as the young of the two others. The plumage of all is of a remarkably fine and silky texture, lying extremely close; and they are all largely and pointedly crested, the sexes hardly differing in this respect.

The waxwings live in numerous flocks, keeping by

pairs only in the breeding season ; and so social is their disposition, that, as soon as the young are able to fly, they collect in large bands from the whole neighbourhood. They perform extensive journeys, and are great and irregular wanderers. Far from being shy, they are simple and easily tamed, but generally soon die in confinement. Their food consists chiefly of juicy fruits, on which they fatten, but to the great detriment of the orchard, where they commit extensive ravages. When fruits are scarce, they seize upon insects, catching them dexterously in the same manner as their distant relatives the flycatchers. No name could be more inappropriate for these birds than that of chatterers, as there are few less noisy, and they might even be called mute with much better reason. They build in trees, and lay, twice in a year, about five eggs.

Whence does the Bohemian waxwing come at the long and irregular periods of its migrations? Whither does it retire to pass its existence and give birth to its progeny? These are circumstances involved in darkness, and which it has not been given to any naturalist to ascertain. It has been stated, and with much appearance of probability, that these birds retire during summer within the arctic circle; but the fact is otherwise, naturalists who have explored these regions asserting that they are rarer and more accidental there than in temperate climates. It seems probable that their chief place of abode is in the oriental parts of the old continent, and, if we may hazard an opinion, we should not be surprised if the extensive and elevated table land of Central Asia was found to be their principal rendezvous, whence, like the Tartars in former times, they make their irregular excursions.

As we can only arrive at the truth in this matter by observing facts, and collecting localities, we shall endeavour to do this with the greatest accuracy. In northern Russia, and the extreme north of Norway, they are seen in great numbers every winter, being observed there earlier than in temperate countries. In northern Asia and eastern Europe their migrations are

tolerably regular; very numerous flocks generally pass through Scania in November, and are again seen on their return in the spring. But they appear only at very remote and irregular periods, and merely as occasional and rare visitants in western, southern, or even central and northern Europe, and then only in the coldest months of the most severe winters. Notwithstanding that they at times invade peculiar districts in vast numbers, so remarkable is the appearance of these winged strangers then considered, that we find it placed upon record. However extraordinary it may seem to those who live in this enlightened age and country, that the unusual appearance of "cedar birds of a large kind" should strike terror into the souls of men, such, notwithstanding, was the effect in more ignorant times. They have been looked upon as the precursors of war, pestilence, and other public calamities. One of their irruptions was experienced in Italy in 1571, when flocks of hundreds were seen flying about in the north of that country in the month of December, and were easily caught. A similar visit had taken place in 1580 in February, marking the epoch when Charles V. caused himself to be crowned at Bologna. Aldrovandi, from whom we learn the above particulars, also informs us that large flocks of them appeared in 1551, when it was remarked, that, though they spread in numbers through the Modenese, the Plaisantine, and other parts of Italy, they carefully avoided entering the Ferrarese, as if to escape the dreadful earthquake that was felt soon after, causing the very birds to turn their flight. In 1552, Gesner informs us, they appeared along the Rhine, near Mentz in Germany, in such numbers as to obscure the sun. They have, however, of late years, in Italy and Germany, and in France especially, at all times, been extremely rare, being seen only in small companies or singly, appearing as if they had strayed from their way. In England, the Bohemian waxwing has always been a rare visitant, coming only at long and uncertain intervals. In the winter of 1810 large flocks were dispersed through various parts of that kingdom, from

which period we do not find it recorded by English writers till the month of February, 1822, when a few came under Mr Selby's inspection, and several were again observed during the severe storm in the winter of 1823. Upon the Continent, its returns are subject to similar uncertainty. In M. Necker's very interesting memoir lately published on the birds of Geneva, we read, that from the beginning of this century only two considerable flights have been observed in that canton, one in January, 1807, and the other in January, 1814, when they were very numerous, and spent the winter there, all departing in March. In 1807 they were dispersed over a great portion of western Europe, and were seen near Edinburgh in the first days of that year.

What extent of country they inhabit or frequent in this continent, and whether numerous or not, we are unable to state. The specimen here described was obtained, together with others, from the northwestern range of the Rocky Mountains, and the species appears to spread widely, as we have been credibly informed by hunters that "cedar birds of a large kind" have been shot a little beyond the Mississippi, at a very great distance from the spot where ours were obtained. Thus does this species extend its range round the whole earth, from the coasts of Europe eastwardly to the Rocky Mountains in America, and we are at a loss to conceive why it should never have been observed on this side of the Mississippi.

Very little is known of the peculiar habits of these elegant birds. They assemble in large flocks, and feed on different kinds of juicy berries, or on insects, which during summer constitute their principal food. In common with many other birds, they are fond of the berries of the mountain ash and phytolacca, are extremely greedy of grapes, and also, though in a less degree, of juniper and laurel berries, apples, currants, figs, and other fruits. They drink often, dipping in their bill repeatedly. Besides their social disposition, and general love of their species, these birds appear susceptible of individual attachment, as if they felt a particular sentiment of benevolence, even independent of reciprocal

sexual attraction. Not only do the male and female caress and feed each other, but the same proofs of mutual kindness have been observed between individuals of the same sex. This amiable disposition, so agreeable for others, often becomes a serious disadvantage to its possessor. It always supposes more sensibility than energy, more confidence than penetration, more simplicity than prudence, and precipitates these, as well as nobler victims, into the snares prepared for them by more artful and selfish beings. Hence they are stigmatized as stupid, and, as they keep generally close together, many are easily killed at once by a single discharge of a gun. They always alight on trees, hopping awkwardly on the ground. Their flight is very rapid: when taking wing, they utter a note resembling the syllables *zi, zi, ri*, but are generally silent, notwithstanding the name that has been given them. They are, however, said to have a sweet and agreeable song in the time of breeding, though at others it is a mere whistle. The place of breeding, as we have intimated, is not known with any certainty, though they are said to build in high northern latitudes, preferring mountainous districts, and laying in the clefts of rocks, which, however, judging from analogy, we cannot believe.

What can be the cause of their leaving their unknown abodes, of their wide migrations, and extraordinary irruptions, it is very difficult to determine. That they are not compelled to them by cold is well proved. Are they to be ascribed to necessity from excessive multiplication, as is the case with the small quadrupeds called lemmings, and even with man himself in a savage state, or in over populous countries? or shall we suppose that they are forced by local penury to seek elsewhere the food they cannot be supplied with at home? Much light may be thrown on the subject by carefully observing their habits and migrations in America.

The Bohemian chatterer being so well known, we shall here only give a description of our best American specimen, which is a female shot on the 20th March, 1825, on the Athabasca river, near the Rocky Mountains. The sexes hardly differ in plumage.

Length, eight and a half inches ; extent, fifteen ; bill, three quarters of an inch long, black, paler at the base of the under mandible ; irides, reddish, often quite red ; nostrils, entirely uncovered. From the base of the ridge of the bill arises, on each side, a velvety black line, bordering the forehead, and spreading on the ophthalmic region, and surrounding almost the whole crown ; throat also deep black. The anterior part of the head is bright bay, behind passing gradually into vinaceous drab ; the feathers of the crown are elongated into a crest measuring nearly an inch and a half ; base of these feathers, blackish ; middle white, whole neck and hind-head and breast, cinereous drab, slightly tinged with vinaceous, and passing by degrees on the posterior parts above and beneath into pure cinereous, slightly tinged with bluish, which predominates on the rump and upper tail-coverts. The black of the throat is somewhat margined with bright bay, and is separated from the black of the eye by a slight obliterated white line. The cinereous of the belly and femorals is paler ; the vent and lower tail-coverts are chestnut rufous, and the feathers very long. The wings measure four and a half inches in length, the second primary is somewhat longer than the first, the others decreasing in succession rapidly. The upper tail-coverts are cinereous drab, like the back, the lower whitish gray ; quills, dusky black, much paler on their inner vane towards the base. The first is unspotted, the second has a slight mark of white on the outer web at tip. This mark increases in size successively on the following, becoming a longitudinal spot, much larger on the secondaries, four of which are furnished with bright red appendages. Each feather of the winglet is broadly white at tip, constituting a remarkable white spot on the wing, which appears to be on the primaries. No yellow whatever is observable on the wing. The tail is three inches long, black, broadly tipped with pale yellow for half an inch, dark bluish gray at base. Tarse, which is three quarters of an inch long, and feet, black.

GENUS VIII. — *HIRUNDO*, LINNEUS.14. *HIRUNDO FULVA*, VIEILL. — FULVOUS, OR CLIFF SWALLOW.

BONAPARTE, PLATE VII. FIG. 1.

With the exception of a very imperfect description, little was known relative to this interesting bird, anterior to Long's expedition to the Rocky Mountains. One of the notes annexed to the account of that journey contains an excellent description of this swallow, with a notice of its habits, and remarkable manner of building. Mr de Witt Clinton has recently published a paper on the same subject, accompanied by some observations from Mr Audubon. Combining what these gentlemen have made known with the information previously given by Vieillot and Say, we can present a tolerably complete history of the cliff swallow.

Some doubts having been entertained whether the *Hirundo lunifrons* of the Rocky Mountains be the same species as the *Hirundo fulva* of the western part of New York, I was desirous of deciding the question by comparing the specimens; this I accomplished through the politeness of Dr Dekay of New York, who, with the kindness and liberality distinctive of those who cultivate science for its own sake, sent me the specimen and nest deposited by Mr Clinton in the cabinet of the Lyceum. Thus being possessed of the individuals in question, we are enabled to place their specific identity beyond the reach of future uncertainty.

That Say considered his *Hirundo lunifrons* as a new bird, is entirely attributable to the incorrectness of Vieillot's figure, which is one of those better suited to mislead than to assist the naturalist in his researches. The most striking characteristic of the *Hirundo fulva* is its even tail, yet Vieillot has represented this part as forked. We are, therefore, not surprised that our learned zoologist, who had no opportunity of consulting the

coloured plate, should not have even thought of comparing his bird with that of Vieillot, who probably figured it with a forked tail merely because it was a swallow. The characters of the cliff swallow are so remarkable, and its manner of building is so peculiar, that, when these are accurately delineated, it cannot be mistaken for any other species.

The cliff swallow is five and a half inches long. The bill is black, and the feet dusky; the irides are dark brown. A narrow black line extends over the bill to each eye; the front is pale rufous, and the remaining part of the crown black violaceous; the chin, throat, and cheeks, are dark ferruginous, extending in a narrow band on the hindhead; the upper part of the body is black, glossed with violaceous; the inferior part of the rump, and some of the tail-coverts, are pale ferruginous; the breast is of a pale rufous ash colour, and the remaining under parts are whitish, tinged with brownish ferruginous. The wings and tail are blackish, the small wing-coverts being glossed with violaceous; the inferior wing-coverts are ashy brown: the tail is nearly entire, somewhat shorter than the tips of the wings; the exterior tail-feather is slightly edged with whitish on the inner vane; the wing and tail-feathers have their shafts black above and white beneath.

This description is taken from our finest male; no difference exists between the sexes, and the young, even during early age, can scarcely be distinguished from the parents, except by having the front white instead of rufous. We are informed by Vieillot, that some individuals have all the inferior surface of the body tinged with the same colour as that of the throat; these are probably very old males.

A very singular trait distinguishes the migrations of this bird. While the European, or white variety of the human race, is rapidly spreading over this continent, from its eastern borders to the remotest plains beyond the Mississippi, the cliff swallow advances from the extreme western regions, annually invading a new territory farther to the eastward, and induces us to

conclude, that a few more summers will find it sporting in this immediate vicinity, and familiarly established along the Atlantic shores.

Like all other North American swallows, this species passes the winter in tropical America, whence in the spring it migrates northward, for the purpose of breeding. It appears to be merely a spring passenger in the West Indies, remaining there but a few days, according to Vieillot, who, not seeing any in the United States, and observing some while at sea, in August, in the latitude of Nova Scotia, supposed that they propagated in a still more northern region. As we have not received any account of their inhabiting the well explored countries around Hudson's Bay, we are led to the conclusion, that the western wilds of the United States have hitherto been their summer resort, and that not until recently have they ventured within the domains of civilized man. Be this as it may, they were observed in great numbers, by Major Long's party, near the Rocky Mountains, in the month of July; and a few were also seen on the banks of the Missouri river. Within ten or twelve years, they have become familiar in different localities of Ohio, Kentucky, &c. whence they are extending very rapidly, and have recently appeared in the western part of New York. In order to shew the rapid progress of this little stranger, we quote the following passage from Mr Clinton's interesting paper:—

The fulvous swallow "first made its appearance at Winchell's tavern, on the high road, about five miles south of Whitehall, near Lake Champlain, and erected its nest under the eaves of an outhouse, where it was covered by the projection of a roof. This was in 1817, and in this year there was but one nest; the second year seven; the third twenty-eight; the fourth forty; and in 1822 there were seventy, and the number has since continued to increase.

"It appeared in 1822 at Whitehall, on the 5th of June, and departed on the 25th of July; and these are the usual times of its arrival and disappearance."

This active little bird is, like its congeners, almost continually on the wing, and feeds on flies and other insects, while performing its aerial evolutions. Its note is different from that of other swallows, and may be well imitated by rubbing a moistened cork around in the neck of a bottle. The species arrive in the west from the south early in April, and immediately begin to construct their symmetrical nests, which are perfected by their united and industrious efforts. At the dawn of day they commence their labours, by collecting the necessary mud from the borders of the river or ponds adjacent, and they persevere in their work until near mid-day, when they relinquish it for some hours, and amuse themselves by sporting in the air, pursuing insects, &c. As soon as the nest acquires the requisite firmness, it is completed, and the female begins to deposit her eggs, which are four in number, white, spotted with dusky brown. The nests are extremely friable, and will readily crumble to pieces: they are assembled in communities. In unsettled countries these birds select a sheltered situation, under a projecting ledge of rock; and, in civilized districts, they have already evinced a predilection for the abodes of man, by building against the walls of houses, immediately under the eaves of the roof, though they have not in the least changed their style of architecture. A nest from the latter situation is now before me; it is hemispherical, five inches wide at its truncated place of attachment to the wall, from which it projects six inches, and consists exclusively of a mixture of sand and clay, lined on the inside with straw and dried grass, negligently disposed for the reception of the eggs. The whole external surface is roughened by the projection of the various little pellets of earth which compose its substance. The entrance is near the top, rounded, projecting, and turning downward, so that the nest may be compared to a chemist's retort, flattened on the side applied to the wall, and with the principal part of the neck broken off.

So great is the industry of these interesting little

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architects, that this massive and commodious structure is sometimes completed in the course of three days. About the middle of July, some nests found near the Rocky Mountains contained young ones, while in others the process of incubation had not terminated. It is probable that the cliff swallows rear two broods in that region, though in Kentucky and Ohio, agreeably to Mr Audubon, they have but one in the year. During the first few days of August, they assemble in flocks, and, after several attempts to commence their migration, they finally succeed in obtaining a unanimity of purpose, and disappear as suddenly as they came.

GENUS IX — *MUSCICAPA*, LINNÆUS.

15. *MUSCICAPA SAVANA*, VIEILLOT.

FORK-TAILED FLYCATCHER, BONAPARTE.

BONAPARTE, PLATE I. FIG. 1.

THOUGH Brisson, Linné, and Pennant have stated the fork-tailed flycatcher to inhabit this region, as far north as Canada, still the fact seemed more than doubtful, since this bird escaped the researches of Vieillot, and, what is more extraordinary, those of the indefatigable Wilson. It is, therefore, a very gratifying circumstance, that we are able to introduce this fine bird with certainty into the Ornithology of the United States, and to remove all doubt on the subject. The present specimen is a beautiful male, in full plumage; it was shot near Bridgetown, New Jersey, at the extraordinary season of the first week in December, and was presented by Mr J. Woodcraft, of that town, to Mr Titian Peale, who favoured me with the opportunity of examining it.

Brisson published the first account of this bird. That we have rejected the name given by Linné may appear contrary to our principles; but in this instance we certainly have no option, inasmuch as the same name has been very properly retained by Wilson, agreeably to Brisson, for the *Lanius tyrannus* of Linné. Had

Linné himself included them both in the same genus, he would doubtless have retained that specific name for the kingbird, which is unquestionably a *Muscicapa* and not a *Lanius*. As the kingbird is a very abundant species, known to every zoological reader by the name of *Tyrannus*, it is obvious that less inconvenience will be produced by changing the name of an almost unknown species, than would result from altering that of one with which we are so familiar. We have, therefore, adopted Vieillot's specific name of *Savana*, taken by that author from Montbeillard, who, in Buffon's work, thereby endeavoured to commemorate this bird's habit of frequenting inundated savannas. Naturalists who separate *Tyrannus* from *Muscicapa* generically, disagree with respect to the arrangement of this species. For ourselves, we consider the former as a subgenus of *Muscicapa*, including the larger species, among which our fork-tailed flycatcher must be placed.

This species is fourteen inches long, its tail measuring nearly ten; the extent from the tip of the one wing to that of the other is fourteen inches. The bill is somewhat more slender and depressed at base than that of the kingbird, and, as well as the feet, is black. The irides are brown. The upper part of the head, including the cheeks and superior origin of the neck, is velvet black. The feathers of the crown are somewhat slender, elevated, and of a yellow orange colour at base, constituting a fine spot, not visible when they are in a state of repose; the remaining part of the neck above, and the back are grayish ash; the rump is of a much darker grayish ash, and gradually passes into black, which is the colour of the superior tail-coverts; the inferior surface of the body, from the base of the bill, as well as the under wing and under tail-coverts, is pure white. The wings are dusky, the coverts being somewhat lighter at tip and on the exterior side; the first primary is edged with whitish on the exterior web, and is equal in length to the fourth; the second primary is longest; the three outer ones have a very extraordinary and profound sinus, or notch on their inner webs, near the

tip, so as to terminate in a slender process. The tail is very profoundly forked, the two exterior feathers measuring nearly ten inches in perfect individuals, whilst the two succeeding are but five inches long, and the other feathers become gradually and proportionally shorter, until those in the middle are scarcely two inches in length; the tail is, in fact, so deeply divided, that if the two exterior feathers were removed, it would still exhibit a very forked appearance. All the tail feathers are black, the exterior one each side being white on the remarkably narrow outer web, and on the shaft beneath, for nearly three-fourths of its length.

I cannot agree with those who say, that the female is distinguished from the other sex by wanting the orange spot on the head, as I think we may safely conclude, from analogy, that there is hardly any difference between the sexes. The young birds are readily recognized, by being destitute of that spot, as well as by having the head cinereous, instead of black; the colour of the whole upper part of the body is also darker, the tail considerably shorter, and the exterior feathers not so much elongated as those of the adult. It is proper to remark, that the elongated tail-feathers of the full grown bird are sometimes very much worn, in consequence of the rapidity with which it passes through the bushes.

Two coloured figures have been given of the fork-tailed flycatcher, the one by Buffon, which is extremely bad, although the rectilinear form of the tail is correctly represented; the other, by Vieillot, which has the exterior tail-feathers unnaturally curved, and, notwithstanding it is preferable to Buffon's figure, yet it is far from being accurate. This author having been unable to procure a North American specimen, chose nevertheless to introduce the species in his *Natural History of North American Birds*, on the authority of former authors, giving a figure from a South American specimen. The error in representing the exterior tail-feathers curved, doubtless arose from the manner in which the dried skin was packed for transportation. Buffon's

plain figure is a more faithful representation than that given in his coloured engravings.

From the very great rarity of the fork-tailed flycatcher in this region, and the advanced season in which this individual was killed, it is evident that it must have strayed from its native country under the influence of extraordinary circumstances; and we are unable to believe that its wanderings have ever extended as far as Canada, notwithstanding the statements of authors to the contrary. It may be proper to observe, that the difference indicated by Linné and Latham between the variety which they suppose to inhabit Canada, and that of Surinam, appears to have no existence in nature.

Although this bird is so very rare and accidental here, we should be led to suppose it a more regular summer visitant of the Southern States, were it not impossible to believe that so showy a bird could have escaped the observation of travellers: hence we infer, that the fork-tailed flycatcher must be included in the catalogue of those species which are mere fortuitous visitors to the United States. As but a single specimen of this bird has been obtained, I cannot give any account of its manners and habits from personal observation.

The native country of the fork-tailed flycatcher is Guiana, where it is rather common, and is improperly called *veuve* (widow,) from the great length of its tail, in which character only it resembles the African birds of that name.

The habits of the fork-tailed flycatcher resemble those of other species of the same genus. It is a solitary bird, remaining for a long time perched on the limb of a tree, whence it occasionally darts after passing insects; or, flying downwards, it alights on the tufts of herbage which appear above the water, affording it a resting place in the midst of those partially inundated lands, called savannas, beyond the limits of which it is not frequently seen. While on the tuft, this bird moves its tail in a manner similar to that of the wagtails. Besides insects, the fork-tailed flycatcher feeds occa-

sionally on vegetable substances, as, on dissection, the stomach of our specimen was found to be filled with pokeberries, (*Phytolacca decandra*, L.)

Beyond these particulars we have no positive knowledge of the manners of our flycatcher, though Vieillot has recorded a history of some length, taken from D'Azara; but the bird observed by the latter author in Paraguay and Buenos Ayres, though closely allied, appears to be specifically distinct from the one we are describing. Vieillot has since been convinced of this difference, and, in the (French) *New Dictionary of Natural History*, he has separated the more southern species under the name of *Tyrannus violentus*. In colour that bird strongly resembles our *Muscicapa savana*, but it is considerably smaller, and has different habits, being gregarious; whilst the *savana* is a solitary bird.

Another species, for which ours may be readily mistaken, is the *Tyrannus bellulus*, Vieill. which, however, is much larger, with a still longer tail, differing also by having a large black collar extending to each corner of the eye, margining the white throat; and the head of the same bluish gray colour with the other superior parts of the body; the remaining under parts being of the same colour, with a narrow brown line in the middle of each feather; and by having a whitish line on each side of the head behind the eye, extending to the occiput. The *Tyrannus bellulus* is a native of Brazil.

16. *MUSCICAPA FORFICATA*, LATHAM.

SWALLOW-TAILED FLYCATCHER.

BONAPARTE, PLATE II. FIG. I.

THE plate given by Buffon of this rare and beautiful bird conveys but an imperfect idea of its character. That author had the merit of publishing the first account of the species; and the individual he described was received from that part of Louisiana which borders on

Mexico. Neither Latham, Gmelin, nor Vieillot, seem to have had an opportunity of examining this bird, as they have evidently drawn on Buffon for what they have said relative to it. Hence it appears that the swallow-tailed flycatcher has never been obtained from the time of Buffon to the period of Major Long's expedition to the unexplored region it inhabits. The present specimen, which is a fine adult male, was shot by Mr Titian Peale, on the 24th of August, on the Canadian fork of the Arkansaw river.

Although this bird is very different from the fork-tailed flycatcher, yet, on account of the form of the tail, and the similarity of the common name, they are apt to be mistaken for each other, and, when both are immature, some caution is required to avoid referring them to the same species. Notwithstanding this similarity, some authors have placed the fork-tailed flycatcher in their genus *Tyrannus*, and the present bird in *Muscicapa*, whereas, from an inspection of the bills, it will at once be seen, that the latter would be still more properly placed in their genus *Tyrannus*, as the form of its bill is exactly the same with that of the kingbird, the type of the subgenus.

The swallow-tailed flycatcher, when in full plumage, is eleven inches long. The bill and feet are blackish; the irides are brown (red, according to authors.) The upper part of the head and neck is of a light gray; the back and scapulars are dark cinereous, tinged with reddish brown; the rump is of the same colour, but strongly tinged with black, and the superior tail-coverts are deep black; the under part of the body is milk white, the flanks being tinged with red; the inferior tail-coverts are pale rosaceous; the wings are brownish black, the upper coverts and secondaries being margined externally and at tip with dull whitish; the under wing-coverts are whitish rosaceous; the axillary feathers, above and beneath, are of a vivid scarlet colour. The tail is greatly elongated and excessively forked; it is of a deep velvet black colour, each feather having the terminal margin of a dull whitish tint, and the shafts

white at their bases. The three exterior feathers on each side are of a delicate pale rosaceous colour on a considerable part of their length from the base. The external one is five inches and a half long; the second and third gradually decrease in length, but the fourth is disproportionately shorter, and from this feather there is again a gradual decrease to the sixth, which is little more than two inches long.

The female of the swallow-tailed flycatcher is probably very similar to the male, but the colours of the young bird are much less vivid, and the exterior tail-feathers are much shorter than those of the adult.

The swallow-tailed flycatcher is as audacious as the kingbird, attacking with unhesitating intrepidity, and turning the flight of the most powerful of the feathered tribe. Its note consists of a chirping, sounding like *tsch, tsch*, much resembling that of the prairie dog, (*Arctomys ludoviciana*, Ord,) by which it deceived the members of Long's party into a belief that they were approaching one of the villages of this animal.

"A note, like that of the prairie dog, (writes Say,) for a moment induced the belief that a village of the marmot was near, but we were soon undeceived by the appearance of the beautiful *Tyrannus forficatus* in full pursuit of a crow. Not at first view recognizing the bird, the fine elongated tail plumes occasionally diverging in a furcate manner, and again closing together, to give direction to the aerial evolutions of the bird, seemed like extraneous processes of dried grass, or twigs of a tree, adventitiously attached to the tail, and influenced by currents of wind. The feathered warrior flew forward to a tree, whence, at our too near approach, he descended to the earth, at a little distance, continuing at intervals his chirping note. This bird seems to be rather rare in this region; but, as the very powder within the barrels of our guns was wet, we were obliged to content ourselves with only a distant view of it."

The range of the swallow-tailed flycatcher appears to be limited to the trans-Mississippian territories, lying

on the southwestern frontier of the United States, more especially frequenting the scanty forests, which, with many partial, and often total interruptions, extend along the Arkansaw, Canadian, and Platte rivers, where in some districts they do not seem to be very uncommon.

17. *MUSCICAPA VERTICALIS*, BONAPARTE.

ARKANSAW FLYCATCHER.

BONAPARTE, PLATE II. FIG. II.

THIS bird, brought from the Rocky Mountains by Major Long's exploring party, is so closely allied to many imperfectly described species of the extensive genus to which it belongs, that ornithologists, at first sight, may very reasonably doubt its pretensions to rank as a new species. But, notwithstanding any doubt that may be produced by its similarity to others, it is certainly an addition to the already numerous catalogue of flycatchers.

The total length of the Arkansaw flycatcher is eight inches. The bill is similar to that of the crested flycatcher, but is more rounded above, and more abruptly inflected at tip, being of a blackish colour, as well as the feet. The head above, and nucha, are pure pale plumbeous; the crown has a restricted bright orange spot in the middle, invisible when the feathers are at rest; there is a dusky spot between the bill and eyes. The cervix and back are pale plumbeous, tinged with olivaceous, and deepening on the rump almost to blackish, which is the colour of the superior tail-coverts. The chin is whitish; the throat and upper part of the breast are of the same colour as the head, but paler; the remaining under surface, including the inferior wing and tail-coverts, is yellow. The wings are brown, the secondaries being margined exteriorly with whitish; the inner webs of the primaries are whitish towards the base, and near the tips they are narrowed; the first is remarkably so, being almost falciform. The tail is of a deep brown black colour, and very slightly

emarginated; the exterior feather is white on the outer web, the shaft being white on the exterior half, and brown on the interior.

Say first described and named this bird in the second volume of the work above quoted, and he remarks that it is allied to the *Tyrannus griseus* and *Tyrannus sulphuratus* of Vieillot. There are many species for which the Arkansaw flycatcher might more readily be mistaken; of these we may mention the crested flycatcher (*Muscicapa crinita*) so well described by Wilson in his second volume; and particularly the *Muscicapa ferox** of Gmelin, a South American bird, the description of which agrees so well with the species we are now considering that it might be equally applied to either. Our bird differs from the two latter by that striking character, the white exterior web of the outer tail-feather. From the *Crinita* it may more especially be known by the spot on the crown, which does not exist in that species; by not having the tail and wing-feathers rufous in any part; and by having the primaries narrowed at tip, while the *Crinita* has them quite large, entire, and rounded. On a particular comparison with the *Ferox*, we shall perceive that the bill of that bird is flattened, broad, and carinate, whilst in the *Verticalis* it is almost rounded above. The general colour of the latter is, besides, much paler, and the tail is less deeply emarginated.

The Arkansaw flycatcher appears to inhabit all the region extending west of the Missouri river. The specimen we have been describing is a male killed in the beginning of July, on the river Platte, a few days' march from the mountains.

* This bird had been incorrectly considered by Vieillot in his *Natural History of North American Birds*, as identical with the *Muscicapa crinita*, but, afterwards perceiving it to be a distinct species, he named it *Tyrannus ferox*. A specimen is, in the Philadelphia Museum, designated by the fanciful name of ruby-crowned flycatcher, (with this Say compared his *Tyrannus verticalis* before he stated it to be new,) and in the New York Museum three specimens are exhibited with the erroneous title of whiskered flycatcher (*Muscicapa barbata*.)

18. *MUSCICAPA SAYA*, BONAPARTE. — SAY'S FLYCATCHER.

BONAPARTE, PLATE II. FIG. III.

WE now introduce into the Fauna of the United States a species which is either a nondescript, or one that has been improperly named; and I dedicate it to my friend Thomas Say, a naturalist of whom America may justly be proud, and whose talents and knowledge are only equalled by his modesty. The specimen now before us is a male, shot by Mr T. Peale, on the 17th of July, near the Arkansaw river, about twenty miles from the Rocky Mountains.

We cannot be perfectly sure that this flycatcher has not heretofore been noticed, since we find in the books, two short and unessential descriptions which might be supposed to indicate it. One of these is the *Muscicapa obscura* of Latham, (dusky flycatcher of his *Synopsis*,) from the Sandwich Islands; but, besides the difference of the tail-feathers, described as acute in that bird, the locality decides against its identity with ours. The other description is that of a bird from Cayenne, the *Muscicapa obscura* of Vieillot,* given by that author as very distinct from Latham's, although he has applied the same name to it, no doubt inadvertently. This may possibly be our bird; but, even, in this case, the name we have chosen will necessarily be retained, as that of *Obscura* attaches to Latham's species by the right of priority.

This flycatcher strongly resembles the common pewee (*Muscicapa fusca*,) but differs from that familiar bird by the very remarkable form of the bill; by the colour of the plumage, which verges above on cinnamon brown, instead of greenish, and beneath is cinereous and rufous, instead of yellowish ochreous; and by the proportional length of the primary feathers, the first being longer than the sixth in our bird, whereas it is shorter in the pewee.

* *Nouv. Dict. d'Hist. Nat.* xxi. p. 451.

The total length of Say's flycatcher is seven inches; the bill is long, straight, and remarkably flattened; the upper mandible is blackish, and but very slightly emarginated; the lower mandible is much dilated, and pale horn colour on the disk. The feet are blackish; the irides are brown. The general colour of the whole upper parts is dull cinnamon brown, darker on the head; the plumage at base is of a lead colour. The throat and breast are of the same dull cinnamon tint, gradually passing into pale rufous towards the belly, which is entirely of the latter colour; the under wing-coverts are white, slightly tinged with rufous. The primaries are dusky, tinged with cinnamon, and having brown shafts; they are considerably paler beneath. The first primary is a quarter of an inch shorter than the second, which is nearly as long as the third; the third is longest; the fourth and fifth gradually decrease, and the sixth is decidedly shorter than the first. The tail is hardly emarginated, and of a blackish brown colour.

We know nothing of the habits of this flycatcher, except what has been communicated by Mr T. Peale, from his manuscript notes. The bird had a nest in July, the time when it was obtained; its voice is somewhat different from that of the pewee, and first called attention to its nest, which was built on a tree, and consisted chiefly of moss and clay, with a few blades of dried grass occasionally interwoven. The young birds were, at that season, just ready to fly.

GENUS X.—*CINCLUS*, LINNÆUS.

19. *CINCLUS PALLASII*, TEMMINCK. -- PALLAS' DIFFER, BONAP.

BONAPARTE, PLATE XVI. FIG. I.

THE recent discovery of the genus *Cinclus* in America, furnishes an interesting fact in the history of the geographical distribution of birds, this genus being one of the twenty-five European, enumerated in our *Observations on Wilson's Ornithology*, as not known

to inhabit this continent. A specimen from the northern countries, communicated by Mr Leadbeater, first enabled us to introduce it into the American Fauna ; and, almost simultaneously, Mr Swainson, in his Synopsis of the birds discovered in Mexico by Mr Bullock, announced it as occurring in that country, but in no other part, as he thought, of America. Judging from his short description, (and the species does not admit of a long one,) we have no hesitation in affirming, that both Mr Swainson's, and that described by Temminck, and supposed to have been found by Pallas in the Crimea, are identical with ours ; notwithstanding the localities are so widely distant from each other, as well as from that whence ours comes, which, however, it will be perceived, is intermediate between them.

It has been frequently remarked by us, (and the fact is now well established,) that many birds of Mexico, entirely unknown in the Atlantic territories of the United States, are met with in the interior, and especially along the range of the Rocky Mountains, at considerably higher latitudes. But it was not to be expected that a Mexican species should extend so far north as the Athabasca Lake, where our specimen was procured. The circumstance is, however, the less surprising in birds of this genus, as their peculiar habits will only allow them to live in certain districts. The case is similar with the dipper of the old continent, which, though widely dispersed, is only seen in mountainous and rocky countries. Though we do not see any improbability in the American species inhabiting the eastern Asiatic shore, we prefer believing that the specimens on which Temminck established the species, and whose supposed native place was the Crimea, were in fact American. The two species are so much alike in size, shape, and even colour, as to defy the attempts of the most determined system maker to separate them into different groups.

The single species, of which the genus *Cinclus* had hitherto consisted, was placed in *Sturnus* by Linné ; and by Scopoli, with much more propriety, in *Motacilla*.

Latham referred it to *Turdus*. Brisson, mistaking for affinity the strong and curious analogy which it bears to the waders, considered it as belonging to the genus *Tringa*, (sandpipers.) Bechstein, Illiger, Cuvier, and all the best modern authorities, have regarded it as the type of a natural genus, for which they have unanimously retained the name of *Cinclus*, given by Bechstein, Vieillot alone dissenting, and calling it *Hydrobata*. This highly characteristic name, notwithstanding its close resemblance in sound and derivation to one already employed by Illiger, as the name of a family, appears to be a great favourite with recent ornithologists, as they have applied it successively to several different genera, and Temminck has lately attempted to impose it on the genus of ducks which I had named *Fuligula*. In my system, the genus *Cinclus* must take its place in the family *Canori*, between the genera *Turdus* and *Myiothera*.

The dippers, or water ouzels, are well distinguished by their peculiarly shaped bill, which is compressed-subulate, slightly bent upwards, notched, and with its edges bent in, and finely denticulated from the middle; but more especially, by their long, stout, perfectly smooth tarsi, with the articulation exposed, a character which is proper to the order of waders, of which they have also the habits, nay, are still more aquatic than any of them. Their plumage also being thick, compact, and oily, is impermeable to water, as much so as that of the most decidedly aquatic web-footed birds; for, when dipped into it, that fluid runs and drops from the surface. Their head is flat, with the forehead low and narrow; the neck is stout; the body short and compact; the nostrils basal, concave, longitudinal, half covered by a membrane; tongue cartilaginous and bifid at tip. Their wings are short and rounded, furnished with a very short spurious feather, and having the third and fourth primaries longest; the tail short, even, and composed of wide feathers; the nails large and robust; the lateral toes are subequal, the outer united at base to the middle one, the hind toe being short and robust.

The female is similar to the male in colour, and the young only more tinged with reddish. They moult but once in the year.

These wild and solitary birds are only met with singly or in pairs, in the neighbourhood of clear and swift-running mountain streams, whose bed is covered with pebbles, and strewn with stones and fragments of rock. They are remarkably shy and cautious, never alight on branches, but keep always on the border of the stream, perched, in an attitude peculiar to themselves, on some stone or rock projecting over the water, attentively watching for their prey. Thence they repeatedly plunge to the bottom, and remain long submerged, searching for fry, crustacea, and the other small aquatic animals that constitute their food. They are also very destructive to musquitoes, and other dipterous insects, and their aquatic larvæ, devouring them beneath the surface. They never avoid water, nor hesitate in the least to enter it, and even precipitate themselves without danger amidst the falls and eddies of cataracts. Their habits are, in fact, so decidedly aquatic, that water may be called their proper element, although systematically they belong to the true land birds. The web-footed tribes swim and dive; the long legged birds wade as long as the water does not touch their feathers; the dippers alone possess the faculty of walking at ease on the bottom, as others do on dry land, crossing in this manner from one shore to the other under water. They may be often seen gradually advancing from the shallows, penetrating deeper and deeper, and, careless of losing their depth, walking with great facility on the gravel against the current. As soon as the water is deep enough for them to plunge, their wings are opened, dropped, and agitated somewhat convulsively, and with the head stretched horizontally, as if flying, they descend to the bottom, where they course up and down in search of food. As long as the eye can follow them, they appear, while in the water, covered with bubbles of air, rapidly emanating from their bodies, as is observed in some coleopterous insects.

The dipper runs very fast: their flight is direct, and swift as an arrow, just skimming the surface, precisely in the manner of the kingfisher. They often plunge under at once, without alighting, reappearing at a distance. When on their favourite rocks, these birds are constantly dipping in the water, at the same time holding their erected tail. While on the wing, they utter a feeble cry, their voice being weak and shrill, but somewhat varied; and they sing from their perch, not loud, but sweetly, even in the depth of winter. Early in the spring, they begin to utter clear and distinct notes, and are among the first to cheer the lonely and romantic haunts which they frequent, with their simple melody.

These birds, like others that live about the water, pair early, and have two broods in the season. The young can leave their nest before being full-fledged; and, at the approach of danger, drop from the height where it is generally placed, into the water. In order that this may be done, they build in some place overhanging the water, the ledge of a rock, or the steep bank of a rivulet; or, sometimes, in inhabited countries, take advantage of mills, bridges, or other works of man. The nest is large, composed of moss, and vaulted above; the eggs are from four to six, and of a milky white. Though very carefully hid, it may be easily discovered by the incessant chirping of the young.

Having seen nothing but the dried skin of the American dipper, and being utterly unacquainted with its habits, we have been describing as common to the genus those of the European species, which are well known, and which we have stopped to watch and admire among the precipices of the Alps and Apennines, where it struggles with the steepest and most noisy cascades, and the wildest torrents. The exceedingly great similarity of form in the two species, strongly warrants the belief of equal similarity in habits. The more uniform and cinereous hue of the American, the want of reddish, but especially the striking absence of the white on the throat and breast,

are the sole, but sufficient marks of difference between the two species.

Pallas's dipper is longer than the common species, measuring eight and a half inches. The bill is perfectly similar, and three quarters of an inch long, blackish, paler beneath and on the edges. The whole bird, without any exception, is of a dark grayish slate colour, with the base of the plumage somewhat lighter; at the superior orbit is a slight indication of whitish. The uniform general colour is somewhat darker on the head, and a shade lighter beneath. The wings are three and a half inches long, as in the genus; the coverts and tertials slightly tipped with dingy whitish; the primaries incline somewhat to brown. The tail measures one inch and a half, and is perfectly even. The feet are of a flesh colour, and the nails dusky white: the tarsus is precisely one inch long.

If we could rely on Brehm, four species of this genus exist, which are all found in the old continent. Two are new ones, proposed by himself, under the names of *Cinclus septentrionalis* and *Cinclus melanogaster*. The latter, according to him, is a Siberian species, appearing occasionally on the northern coast of European Russia in winter, and is, perhaps, a genuine species, easily distinguished from the *Cinclus aquaticus*, by having but ten feathers in the tail, whilst all others have twelve, in addition to its smaller size, darker colour, and dingy throat; but the former can hardly be regarded even as a northern variety produced by climate. Mr Brehm is probably quite correct in observing, that both his new species are perfectly similar to the old one.

GENUS XI. — MYIOTHERA, BONAPARTE.

20. MYIOTHERA OBSOLETA, BONAPARTE.

ROCKY MOUNTAIN ANTCATCHER.

BONAPARTE, PLATE I. FIG. II.

THIS bird is one of those beings which seem created to puzzle the naturalist, and convince him that nature

will never conform to his systems, however perfect his ingenuity may be capable of devising them. This will become sufficiently apparent, when we consider in what manner different authors would have arranged it.

We cannot positively decide whether Vieillot and his followers would have referred this species to *Myrmothera*, a name they have substituted for *Myiothera*; to their genus *Thryothorus*, which we unite to *Troglodytes*; or to their slender billed section of *Tamnophilus*, rejected by us from that genus, and of which some recent authors have made a genus called *Formicivora*; yet we have very little hesitation in stating our belief, that they would have assigned its place among the species of the latter. According to our classification, it is certainly not a *Tamnophilus*, as we adopt the genus, agreeably to the characters given by Temminck, who, not admitting the genus *Troglodytes*, would undoubtedly have arranged this bird with *Myiothera*, as Illiger would also have done.

The only point, therefore, to be established by us, is, whether this bird is a *Myiothera* or a *Troglodytes*. It is, in fact, a link intermediate to both. After a careful examination of its form, especially the unequal length of the mandibles, the notch of the superior mandible, and the length of the tarsus; and, after a due consideration of the little that is known relative to its habits, we unhesitatingly place it with *Myiothera*, though, in consequence of its having the bill more slender, long, and arcuated, than that of any other species I have seen, it must occupy the last station in the genus, being still more closely allied to *Troglodytes*, than those species whose great affinity to that genus has been pointed out by Cuvier. The figure which our rocky mountain antcatcher resembles most, is Buffon's Pl. Enl. 823, fig. 1, (*Myiothera lineata*.) The colours of our bird are also similar to those of a wren; but this similitude is likewise observed in other *Myiotheræ*.

This bird was brought from the Arkansaw river, in the neighbourhood of the Rocky Mountains, by Major Long's exploring party, and was described by Say

under the name of *Troglodytes obsoleta*, from its close resemblance to the Carolina wren, (*Troglodytes Ludovicianus*), which Wilson considered a *Certhai*, and Vieillot a *Thryothorus*.

As the rocky mountain antcatcher is the first and only species hitherto discovered in North America, we shall make some general observations on the peculiarities of a genus thus introduced into the Fauna of the United States.

Buffon first formed a distinct group of the antcatchers, under the name of *Fourmiliers*, and considered them as allied to his *Brèves*, now forming the genus *Pitta* of Vieillot, they having been previously placed in that of *Turdus*. Lacépède adopted that group as a genus, and applied to it the name of *Myrmecophaga*. Illiger added such species of the genus *Lanius* of Linné and Latham, as are destitute of prominent teeth to the bill, and gave to the genus, thus constituted, the name of *Myiothera*; rejecting Lacépède's designation, as already appropriated to a genus of mammalia.

Cuvier perceived that some of the *Fourmiliers* of Buffon were true thrushes; but he retained the remainder as *Myiotheræ*, among which he also included the *Pittæ*. Vieillot, besides the *Pittæ*, removed some other species, in order to place them in his new genera *Conopophaga* and *Tamnophilus*, giving the name of *Myrmothera* to the remaining species, with the exception of the *Myiothera rex*, for which he formed a distinct genus, with the name of *Grallaria*. We agree with Vieillot, in respect to the latter bird; but, as regards the other species, we prefer the arrangement of Temminck, who has adopted the genus *Myiothera* nearly as constituted by Illiger, including some of the slender-billed *Tamnophili* of Vieillot, of which our *Myiothera obsoleta* would probably be one, as above stated.

The genus thus constituted contains numerous species, which inhabit the hottest parts of the globe; a greater number of them existing in South America, than elsewhere. For the sake of convenience, several sections may be formed in this genus, founded on the

characters of the bill, tail, and tarsus; but as we have only one species, it does not rest with us to make divisions; and we shall merely remark, that our *obsoleta* is referable to the last section, consisting of those whose bills are the most slender, elongated, and arcuated, in company with the *Turdus lineatus* of Gmelin.

The antcatchers may justly be enumerated amongst the benefactors of mankind, as they dwell in regions where the ants are so numerous, large, and voracious, that, without their agency, co-operating with that of the *Myrmecophaga jubata*, and a few other ant-eating quadrupeds, the produce of the soil would inevitably be destroyed in those fertile parts of the globe. The ant-hills of South America are often more than twenty feet in diameter, and many feet in height. These wonderful edifices are thronged with two hundred fold more inhabitants, and are proportionally far more numerous, than the small ones with which we are familiar. Breeding in vast numbers, and multiplying with great celerity and profusion, the increase of these insects would soon enable them to swarm over the greatest extent of country, were not their propagation and diffusion limited by the active exertions of that part of the animal creation, which continually subsist by their destruction.

The antcatchers run rapidly on the ground, alighting but seldom on trees, and then on the lowest branches; they generally associate in small flocks, feed exclusively on insects, and most commonly frequent the large ant-hills before mentioned. Several different species of these birds are often observed to live in perfect harmony on the same mound, which, as it supplies an abundance of food for all, removes one of the causes of discord which is most universally operative throughout animated nature. On the same principle, we might explain the comparative mildness of herbivorous animals, as well as the ferocity and solitary habits of carnivorous, and particularly of rapacious animals, which repulse all others from their society, and forbid even their own kind to approach the limits of their sanguinary domain.

The antcatchers never soar high in the air, nor do they extend their flight to any great distance, without alighting to rest, in consequence of the shortness of their wings and tail, which, in fact, seem to be seldom employed for any other purpose, than to assist them in running along the ground, or in leaping from branch to branch of bushes and low trees,—an exercise in which they display remarkable activity. Some species, like the woodpeckers, climb on the trunks of trees in pursuit of insects; and it would appear, from their restless habits and almost constant motion, that their limited excursions are entirely attributable to the want of more ample provision for flight. The antcatchers are never found in settled districts, where their favourite insects are generally less abundant; but they live in the dense and remote parts of forests, far from the abodes of man and civilization. They also dislike open and wet countries.

The note of the antcatchers is as various as the species are different; but it is always very remarkable and peculiar. Their flesh is oily and disagreeable to the taste; and, when the bird is opened, a very offensive odour is diffused, from the remains of half-digested ants and other insects, contained in the stomach.

The plumage of the antcatchers very probably undergoes considerable changes in colour. The size of the sexes is different, the female being much larger than the male. Such variations may have induced naturalists to consider many as species, that really do not exist, as such, in nature.

The nest of these birds is hemispherical, varying in magnitude, according to the size of the species, composed of dried grass, rudely interwoven; it is fixed to small trees, or attached by each side to a branch, at the distance of two or three feet from the ground. The eggs are nearly round, and three or four in number.

The discovery of any species of this genus in the old world, is quite recent, and it had previously been believed, that the genus was peculiar to South America; and though the existence of ant-destroying birds was suspected in other tropical regions, they were supposed

to be generically distinct from those of the corresponding parts of America, as was known to be the fact, in the case of the ant-eating quadrupeds. This opinion was founded on the admitted axiom, that nature always varies her groups in remote tropical regions having no communication with each other. The reverse, however, is the fact, in the case of the ant-catching birds, as we find perfect analogies between the species residing in those distant parts of the globe, even throughout the different sections into which the genus may be divided.

The rocky mountain antcatcher is six inches long. The bill, measured from the corner of the mouth, is more than one inch in length, being slightly curved almost from the base; it is very slender, being nearly two-eighths of an inch in diameter at the base, and only the sixteenth of an inch in the middle, whence it continues to diminish to the tip; and is of a dark horn colour, paler beneath. The feet are dusky; and the length of the tarsus is seven-eighths of an inch. The irides are dark brown; the whole plumage above is of a dusky-brownish, slightly undulated with pale, tinted with dull ferruginous on the top of the head and superior portions of the back. The sides of the head are dull whitish, with a broad brown line passing through the eye to the commencement of the neck. The chin, throat, and breast, are whitish, each feather being marked by a longitudinal line of light brown. The belly is white; and the flanks are slightly tinged with ferruginous. The primaries are entirely destitute of undulations or spots; the tail-coverts are pale, each with four or five fuscous bands; the inferior tail coverts are white, each being bifasciate with blackish brown. The tail is nearly two inches long, rounded, broadly tipped with ferruginous yellow, and having a narrow black band before the tip; the remaining part of the tail is of the same colour with the wings, and is obsoletely banded, these bands being more distinct on the two middle feathers, which are destitute of the black and yellowish termination; the exterior feather is dusky

at tip, marked by four yellowish-white spots on the exterior, and by two larger ones on the inner web.

The specimen of the rocky mountain antcatcher we are describing, is a male, shot in the month of July, and possibly not adult. As it is the only one brought by Major Long's party, we cannot determine the extent or nature of the variations the species may undergo from age, sex, or season.

The note of this bird is peculiar, resembling the harsh voice of the terns. It inhabits the sterile country bordering on the river Arkansaw, in the neighbourhood of the Rocky Mountains, where it is frequently observed hopping on the ground, or flitting among the branches, and weather-beaten, half-reclining trunks of a species of juniper: when it flies among the crooked limbs of this tree, it spreads its tail considerably, but was never seen to climb. They were generally observed in small associations of five or six individuals, perhaps composing single families.

GENUS XII.—*SYLVIA*, LINNAEUS

21. *SYLVIA CHRYSOPTERA*, LATHAM.

FEMALE GOLDEN-WINGED WARBLER, PENNANT.

BONAPARTE, PLATE I. FIG. III.

THE female of this pretty little warbler, hitherto unknown to any naturalist, is now described for the first time. For the opportunity, we are indebted to Mr Titian Peale, who shot it on the 24th of May, near Camden, New Jersey; and, with his usual kindness and zeal for natural history, communicated it to us for this work.

This little warbler differs so materially from its mate, as to require a distinct description, in order to be recognized; yet we cannot fail to perceive a kind of family resemblance between the sexes; and, by comparing the two descriptions, our readers will agree with us that they are but one and the same species, in a different

garniture of plumage. The distribution of markings is really similar in both sexes; but in the female the colours are paler, and green prevails on those parts which, in the male, are of a dark slate colour.

The female of the golden-winged warbler is four and a half inches long. The bill is blackish, straight, entire, rounded, and gradually tapering to a sharp point. The feet are brownish ash; the irides, dark brown. The front is golden yellow; the top of the head, bright olive yellow; the back of the head, and superior parts of the neck and body are of a pale plumbeous hue, the feathers being tipped with yellow olive, more particularly on the rump; the superior tail-coverts are pure pale plumbeous. A wide slate coloured stripe passes through the eye from the bill, and dilates on the cheeks; this is margined by a white line above the eye, and by a wider one on each side of the throat. The throat is of a pale slate colour, becoming still paler on the breast. The remaining under parts are whitish, occasionally tinged with yellow, and with slate colour on the flanks. The wings are of the same colour as the back, but somewhat darker, and are crossed by two wide bands of bright yellow, formed by the tips of the first and second rows of wing-coverts. The primaries are dusky, margined on the exterior web with pale, and on the inner broadly with white. The secondaries are broadly margined with yellow olive on the outer web, and with white on the inner web. The tail is nearly even at tip, of a dusky plumbeous colour; the three lateral feathers have a large pure white spot on the inner web.

This last essential character also exists in the male, though Wilson has not mentioned it. As to the manners and habits of the species, he has given us no information, except that it is rare, and remains only a few days in Pennsylvania. He says nothing of the female, and Vieillot never saw it.

We regret that we are unacquainted with the form of its nest, and the peculiarity of its song. We can only state, that during its short stay in Pennsylvania,

it is solitary and silent, gleaning amongst the branches of trees, and creeping much after the manner of the titmouse, with its head frequently downwards, in pursuit of larvæ and insects, which constitute exclusively the food of this species.

Wilson was impressed with the opinion, that the shape of the bill would justify the formation of a distinct subgenus, which would include this bird, the *Sylvia vermivora*, and some other species. In this opinion Cuvier has coincided, by forming his subgenus *Dacnis*, which he places under his extensive genus *Cassicus*, remarking that they form the passage to *Motacilla*. This subgenus we shall adopt, but we differ from Cuvier by arranging it under *Sylvia*; it will then form the transition to the more slender-billed *Icteri*. Temminck and Vieillot have arranged them also under *Sylvia*; the latter author, in the (French) *New Dictionary of Natural History*, gives them the name of pitpits; and it is most probably from want of examination, that he has not considered the present bird as belonging to that section.

22. *SYLVIA MARITIMA*, BONAP. — FEMALE CAPE MAY WARBLER.

BONAPARTE, PLATE III. FIG. III.

I WAS so fortunate as to obtain this undescribed little warbler in a small wood near Bordentown, New Jersey, on the 14th of May, at which season ornithologists would do well to be on the alert to detect the passenger warblers, whose stay in this vicinity is frequently limited to a very few days.

Judging by the analogical rules of our science, this bird is no other than the female of Wilson's Cape May warbler. Its appearance is so different from the male he described, that the specific identity is not recognized at first sight; but, by carefully comparing the two specimens, a correspondence in the least variable characters may readily be perceived, especially in the remarkable slenderness of the bill, which distinguishes

the Cape May from all other resembling species of North American warblers.

Wilson has given no information relative to the history and habits of this species, having never procured more than a male specimen; and we have equally to regret, that, having obtained but a single female, we are unable to supply the deficiency, even in regard to its song.

The female Cape May warbler is four inches and three quarters long, and more than eight in extent. The bill is slender, delicate, and slightly curved, being black, as well as the feet. The irides are dark brown; the upper part of the head, olive cinereous, each feather having a small blackish spot on the middle. A yellow line extends from the bill over the eye, and is prolonged in an obsolete trace around the auditory region, thence returning to the corner of the mouth. A blackish line passes through the eye, which is circumscribed by a whitish circle; the cheeks are dull cinereous, with very small pale spots; the upper parts of the neck and of the body are olive cinereous, tinged with more cinereous on the neck, and with yellow olive on the rump. The chin is whitish; the throat, breast, and flanks are whitish, slightly tinged with yellowish, each feather having a blackish spot on the middle; the belly is immaculate; the vent and inferior tail-coverts are shaded in the middle of each feather with dusky. The smaller wing-coverts are dull olive green, blackish in the centre; the middling wing-coverts are black, margined exteriorly, and tipped with pure white; the greater wing-coverts are blackish, margined with olive white; the primaries are dusky, finely edged with bright olive green on the exterior web, obsolete on that of the first primary, which is of the same length as the fourth; the second and third are longest, and but little longer than the fourth. The tail is slightly emarginated, the feathers being dusky, edged with bright olive green on the exterior side, and with white on the interior; the two or three exterior feathers on each side have a pure white spot on their inner webs near the tip.

The female Cape May warbler may be very easily mistaken for an imperfect *Sylvia coronata*, of which four or five nominal species have already been made. The striking resemblance it bears to the young, and to the autumnal condition of the plumage in that species, requires a few comparative observations to prevent their being confounded together.

The present bird is smaller than the *coronata*, with a more slender, and rather more elongated bill; it is altogether destitute of the yellow spot on the head, as well as of the yellow on the rump, which is a striking character of the *coronata* in all its states, and gives rise to the English name adopted by Wilson.

The colour of the outer edging of the wing and tail feathers is a very good distinctive mark; in the *maritima* it is olive green, whilst in the *coronata* it is white. The white spot on the inner webs of the exterior tail feathers, is also four times larger in the *coronata* than in the *maritima*.

23. *SYLVIA CELATA*, BONAP. — ORANGE-CROWNED WARBLER.

BONAPARTE, PLATE V. FIG. II.

THIS little bird, discovered, early in May, at Engineer Cantonment, on the Missouri river, was first described and named by Say; the species was not uncommon at that season, and appeared to be on its passage farther north. It is more particularly interesting, inasmuch as it enriches the Fauna of the United States with another species of the small subgenus *Dacnis*, which may be ascertained by inspecting the bill.

The orange-crowned warbler is full five inches long, and seven in extent. The bill is dark horn colour, slender, straight, entire, and tapering to an acute point; the base of the inferior mandible is whitish beneath; the legs are dusky; the irides dark brown. The general plumage above is dull greenish olive, the rump and tail-coverts being bright yellowish olive. The head is very slightly and inconspicuously crested; the feathers of

the crest are orange at base, constituting a spot on the crown, visible only when they are elevated, being tipped with the common colour. The whole bird beneath is dull olive yellow; the inferior tail-coverts are pure yellow. The wings are destitute of spots or bands; the primaries are dark brown, olive green on the exterior margin, which is much paler on the outer ones; the interior margin is whitish; the four outer primaries are subequal; the fifth is but very little shorter. The tail is even, the feathers being dark brown, edged with olive green on the outer, and with white on the inner web.

The orange-crowned warbler resembles several species of indigenous and foreign warblers; and the females of others, such as that of the *Sylvia trichas*, may also be mistaken for it; but it may be distinguished from each of them respectively, by particular characters, which it is not necessary to detail, as the concealed orange spot of the crown is a peculiarity not possessed by either of the allied species. The Nashville warbler (*Sylvia rubricapilla*) of Wilson, seems to be more closely related to the orange-crowned warbler than any other. That bird, also, is evidently a *Dacnis*, and scarcely differs from our species, except in the white belly, the light ash colour of the head and neck, and the deep chestnut colour disposed in small touches on the crown, instead of an uniform orange colour. The only difference observable between the sexes is, that the rump of the male is of a brighter colour, approaching, in old birds, to a pure yellow.

During winter, the orange-crowned warbler is one of the most common birds in the neighbourhood of St Augustin, Florida, almost exclusively frequenting the orange trees. Their manners resemble those of the kindred species, though they have a remarkable habit of constantly inflecting the tail, like the pewee. The note consists of a chuck, and a faint squeak, but little louder than that of a mouse.

24. *SYLVIA PALMARUM*, LATHAM. — PALM WARBLER.

BONAPARTE, PLATE X. FIG. II.

THIS is one of those lively, transient visitants, which, coming in spring from warmer regions, pass through the middle states on their way to still colder and more northern countries, to breed. From the scarcity of the species, its passage has hitherto been unobserved; and it is now, for the first time, introduced as a bird of the United States. Authors who have heretofore made mention of it, represent it as a permanent resident of St Domingo, and other islands of the West Indies, and even describe its nest and habits, as observed there.

In the United States, it is found during winter in Florida, where it is, at that season, one of the most common birds. In the month of November, they are very abundant in the neighbourhood of St Augustine, in East Florida, even in the town, and in other parts of the territory wherever the orange tree is cultivated, being rare elsewhere. They are found in great numbers in the orange groves near Charleston, south Carolina, at the same season, and have also been observed at Key West, and the Tortugas, in the middle of February, and at Key Vacas in the middle of March. Their manners are sprightly, and a jerking of the tail, like the pewee, characterizes them at first sight from a distance. The only note we have heard them utter, is a simple chirp, very much like that of the black and yellow warbler, *Sylvia maculosa*, (*Magnolia* of Wils.) They are fond of keeping among the thick foliage of the orange trees. A few are observed every year in spring, on the borders of the Schuylkill, near Philadelphia, as well as in the central parts of New Jersey, on their passage to the North. They breed in Maine, and other parts of New England, where they are common during summer, and perhaps also in Canada, though probably not extending to the inhospitable

climates of Hudson's Bay, whose natural productions are so well known.

The present bird was shot near Bordentown, on the 17th of April, in the morning. It was a fine adult male, in the gayer plumage of the breeding season, and a description is subjoined.

Length five inches and a quarter; extent more than eight inches; bill, five-eighths of an inch long, very slender, straight, hardly notched, blackish, paler beneath; feet, dusky gray, yellowish inside; irides, dark brown, nearly black; crown, bright chestnut bay; bottom of the plumage lead colour all over, much darker beneath; a well defined superciliar line, and the rudiment of another, on the medial base of the upper mandible, rich yellow: the same colour also encircles the eye; streak through the eyes and cheeks dusky olive, somewhat intermixed with dull chestnut; upper parts olive green, each feather being dusky in the middle; rump and upper tail-coverts yellow olive; all beneath bright yellow; sides of the neck, breast, and flanks, with chestnut streaks; superior wing-coverts blackish, margined and tipped with olive green, and somewhat tinged with chestnut; inferior wing-coverts yellowish; quills dusky, edged exteriorly with green, the outer one with white on the outer side, two exterior with a large white spot on the inner web at tip.

In the plumage here described, it has been mentioned by several authors, under the name of *Sylvia ruficapilla*, and by Latham is called the bloody-side warbler. In that which we are about to describe, it was first made known by Buffon, who adopted the name of *Bimbelé*, given to it in the West Indies, and in this state it is figured by Vieillot, as the *Sylvia palmarum*. The following description is drawn up from a specimen procured in Florida, in winter.

Length five inches; bill half an inch, slender, almost straight, and very slightly notched, blackish, paler beneath; the feet are blackish; irides, very dark brown. The general plumage above, is olive brown, each feather being dusky along the middle: the feathers of

the head are dusky at base, as is the whole plumage; then they are chestnut nearly to the tip, (forming a concealed spot of that colour on the crown,) where they are of the common colour, but somewhat darker; the rump and superior tail-coverts are yellow olive; a well defined yellowish white line passes over the eye, which is encircled with white; the cheeks are dusky, as well as a streak through the eye; the inferior parts are whitish, slightly tinged with yellowish, and with a few blackish streaks on each side of the throat, and on the breast and flanks; the belly is immaculate, and more richly tinged with yellow, the inferior tail-coverts being pure yellow; the wing-coverts are of the colour of the feathers of the back, the blackish centre being more extended and deeper; the wings have no bands; the quill feathers are blackish, edged externally with pale yellow olive, becoming whitish towards the tip; the five outer ones are subequal; the tail is even, its feathers are somewhat pointed, edged externally with yellow olive, internally with whitish, the outer one also externally whitish; the two outer ones with a large pure white spot on their inner vane at tip; the third and fourth, each side, with an inner white terminal margin.

In this plumage, this bird resembles so nearly *Sylvia coronata* in its most humble dress, that it is distinguishable only on a close examination. However, the bill is longer, and more slender, the crown spot chestnut instead of yellow, the feathers being destitute of the white which is observable in the other, by separating the feathers; the rump is olive yellow, not pure yellow, and that colour extending on the tail-coverts, which it does not in *Sylvia coronata*. The under parts tinged with yellow, and especially the pure yellow tail-coverts, which are pure white in *S. coronata*, will sufficiently distinguish them.

It is a remarkable circumstance, that there is no obvious difference to be observed between the plumage of the sexes, notwithstanding the statements of authors to the contrary. This is the case, however, in *S.*

coronata, and in almost all the warblers that change periodically from a dull to a bright plumage; and, in fact, in most birds in which this change takes place.

According to Buffon and Vieillot, this bird is a permanent resident in the West Indies, where, as they state, the name is sometimes applied to it of *Fausse Linotte*. We, however, can perceive scarcely any resemblance, except in its dull state of plumage, to a similar state of the red-poll finch. The name of *Bimbelé*, by which it is known among the negroes of those countries, is derived from the recollection of an African bird, to which, probably, the resemblance is not more evident. Unfortunately, this propensity of limited minds to refer new objects, however distinct, to those with which they are acquainted, seems to have prevailed throughout the world, and is found exemplified no where more absurdly than in the Anglo-American names of plants and animals.

The food of this little warbler consists chiefly of fruits and small seeds. Its song is limited to five or six notes; but though neither brilliant nor varied, it is highly agreeable, the tones being full, soft, and mellow. While other birds of its kind build in thickets and humble situations, this proud little creature is said always to select the very lofty tree from which it takes its name, the palmist, (a species of palm,) and to place its nest in the top, in the sort of hive formed at the base or insertion of the peduncle which sustains the clusters of fruit.

Such are the facts we have gathered from authors; but as the singular description of the nest coincides exactly with the manner of building of the *Tanagra dominica*, and as, moreover, the palm warbler appears not to be known in its gayer vesture in the West Indies, we cannot easily believe that it breeds elsewhere than where we have stated; that is, in the temperate, and even colder regions of America, and that what has been mistaken for its nest, in reality belongs to the above named, or some other bird.

The first accounts of this species were given, as we

have already stated, by Buffon, and from him subsequent writers appear to have copied what they relate of it. The bird which he described must have been a very young specimen, as its colours are very dull, much more so than the one figured and described by Vieillot, who supposes, though erroneously, Buffon's specimen to have been a female. Even Vieillot's, which is certainly our species in its winter dress, is much duller in colour than those we received from Florida; and these again are far less brilliant than ours, as it appears for a few days in the spring in Pennsylvania and New Jersey, and is found throughout summer in Maine; thus exhibiting the several gradations of change which the plumage undergoes.

Naturalists cannot be too circumspect in receiving reports even from the most respectable sources, their own senses affording the only authentic testimony to be relied on. From information derived from Mr T. Peale, who had no opportunity for making comparisons, we erroneously stated, (*supra*, p. 108.) that *Sylvia celata*, Say, was one of the most common birds in Florida during winter, keeping among the orange trees, &c. All this statement had reference to the present species; and as soon as the specimens brought by Mr Peale as *Sylvia celata*, were shewn to us, the error was immediately perceived. We therefore hasten to correct this mistake, which would be otherwise of more consequence, inasmuch as no one else could, for a long time, detect it. This species resembles, it is true, *S. celata*, (whose range must remain limited to the Rocky Mountains,) and perhaps still more *S. rubricapilla*, Wilson, but it is not of the same subgenus, *Dacus*, and it may readily be known by the white spots of the tail feathers.

When the genus *Sylvia*, containing upwards of two hundred and fifty species, shall have been properly studied, it will be found practicable to divide it into several more sections, subgenera, and even perhaps genera. This bird, along with many other North American species, will constitute a highly natural

group, very distinct from the true *Sylvia*, of which *S. atricapilla* may be considered as the type. We presume that it is the group we have in view, to which Mr Swainson has given the name of *Sylvicola*, in his Synopsis of Mexican birds. Our species is erroneously placed by Buffon among his *Demi-fins*, corresponding to our *Dacnis*, and Wilson's *Worm-eaters*.

25. SYLVIA AZUREA, STEPHENS.

FEMALE CÆRULEAN WARBLER.

BONAPARTE, PLATE XI. FIG. II.

THE merit of having discovered this bird, is entirely due to the Peale family, whose exertions have contributed so largely to extend the limits of natural history. The male, which he has accurately described and figured, was made known to Wilson by the late venerable Charles Wilson Peale, who alone, and unaided, accomplished an enterprise, in the formation of the Philadelphia Museum, that could hardly have been exceeded under the fostering hand of the most powerful government. To the no less zealous researches of Mr Titian Peale, the discovery of the female is recently owing, who moreover evinced his sagacity by determining its affinities, and pointing out its true place in the system. Although it preserves the principal characters of the male, yet the difference is sufficiently marked to deserve especial notice in this work.

The present specimen was procured on the banks of the Schuylkill, near Mantua village, on the 1st of August, 1825. It was very active, skipping about on the branches of an oak, attentively searching the leaves, and crevices of the bark, and at intervals taking its food on the wing, in the manner of the flycatchers. It warbled in an under tone, not very unlike that of the blue-gray flycatcher of Wilson, (*Sylvia cærulea*, L.) a circumstance that would lead to the supposition of its being a male in summer dress; but on dissection it proved to be a female.

The female azure warbler is four and three-quarter inches long, and eight and a quarter in extent.* Bill, blackish above, pale bluish beneath; feet, light blue; irides, very dark brown; head and neck above, and back, rich silky green, brighter on the head, and passing gradually into dull bluish on the rump; line from the bill over the eye, whitish, above which is the indication of a blue-black line widening behind; a dusky streak passes through the eye; cheeks, dusky greenish; beneath, entirely whitish, strongly tinged with yellow on the chin; sides of the neck, breast, flanks, and vent, streaked with dark bluish; the base of the whole plumage is bluish white; inferior tail-coverts, pure white; wings and tail, very similar to those of the male, though much less brilliant; smaller wing-coverts, bluish, tipped with green; middling and large wing-coverts, blackish, widely tipped with white, constituting two very apparent bands across the wings, the white slightly tinged with yellowish at tip; spurious wing, blackish; quill-feathers, blackish, edged externally with green, internally and at tip with whitish, the three nearest the body more widely so; the inferior wing-coverts, white; tail, hardly rounded, feathers, dusky slate, slightly tinged with bluish externally, and lined with pure white internally, each with a white spot towards the tip on the inner web. This spot is larger on the outer feathers, and decreases gradually until it becomes inconspicuous on the two middle ones.

The description of the male need not here be repeated, having been already given with sufficient accuracy by Wilson, to whose work the reader is referred. On a comparison of the description, he will find that the chief difference between the sexes consists in the female being green instead of blue, in her wanting the black streaks, and in being tinged with yellow beneath.

We have to regret our inability to add much to

* The dimensions given by Wilson of the male must be rather below the standard, as they are inferior to those of the female, whereas all the specimens we examined were larger, as usual.

Wilson's short and imperfect account of the species. It is by no means more common at this time, than it was when he wrote; which may account for the difficulty of ascertaining the period of its migrations, and for the circumstance of our having never met with the nest, and our want of acquaintance with its habits. We can only add to its history, that it is found in the trans-Mississippian territory; for the *Sylvia bifasciata* of Say, accurately described in Long's first expedition, is no other than the male. We have examined the specimen shot at Engineer Cantonment.

Although the undisputed merit of first making known this species belongs to Wilson, yet the scientific name that he applied to it cannot be retained, inasmuch as it is pre-occupied by the blue-gray warbler, a Linnean species, which Wilson placed in *Muscicapa*, but which we consider a *Sylvia*, notwithstanding that it does in some degree aberrate from the typical species of that genus.* Under such circumstances, we cannot hesitate in adopting the name substituted by Mr Stephens, the continuator of Shaw's compilation.

GENUS XII — *REGULUS*, VIEILLLOT

26. *REGULUS CRISTATUS*, RAY.

FEMALE GOLDFIN-CROWNED GOLD-CREST.

BONAPARTE, PLATE II. FIG. IV.

Two distinct species of gold-crest have been, until lately, considered by naturalists as but one. Are they both inhabitants of this continent? and, if not, which is the American species? These questions cannot be readily answered, since we have nothing better than negative evidence to offer relative to the first. The present female, however, is decisive as to which of them inhabits this country. A slight inspection of this specimen leaves no doubt as to its being the female of

* See my *Observations on the Nomenclature of Wilson's Ornithology*.

the *Regulus cristatus*; and, should the *Regulus ignicapillus*, contrary to our expectations, also prove to be an inhabitant of this country, it will be described along with its mate, in another volume of this work. All the ornithologists state, that the latter is a native of this continent, whilst they take no notice whatever of the *Regulus cristatus*, which, if not the only indigenous, is certainly the more common species. This error seems to have originated with Vieillot, who, considering the two species as but one, probably was not careful in selecting the individual from which his drawing was made; he may, therefore, have chosen an European bird, and unluckily of the other species, as both are found in Europe.

However this may be, his figure is certainly that of the *Ignicapillus*; and, it is equally obvious, that his short description of the female can only apply to the female of the *Cristatus*, which corroborates my opinion. In the (*French*) *New Dictionary of Natural History*, Vieillot distinguishes two varieties of *Regulus cristatus*, and again describes the *Ignicapillus* as the one he saw in America. If this observation could be replied upon, we should admit that both species are inhabitants of this country, although the present, which must be by far the most numerous, is certainly not the *Ignicapillus*.

I agree with Ray, Vieillot, and other authors, and dissent from Linné, Latham, Wilson, and Temminck, respecting the propriety of placing these birds in a separate genus from *Sylvia*, and I have therefore changed the generic name adopted by Wilson. This genus forms a link intermediate to the genera *Sylvia* and *Parus*. It is small both in the number and size of its species, consisting of the two smallest of the European birds, one of which is the subject of this article; an American species, the ruby-crowned gold-crest (*Regulus calendulus*), so well described by Wilson; and a fourth from Asia.

The most obvious characters that distinguish the genus *Regulus* from *Sylvia* are, the bill remarkably

slender throughout, and two small decomposed feathers, directed forwards so as to cover the nostrils.

The habits of the gold-crests resemble, in many respects, those of the titmouse. They delight in cold weather, and then often perch on evergreen trees. They display great activity and agility in search of their food, being almost constantly in motion, hopping from branch to branch, or climbing on trees, frequently with the head downwards, searching the chinks of the bark for their prey. These little birds commonly feed on the smallest insects, which they catch adroitly while on the wing. In the winter, they seek them in their retreats, where they lie torpid or dead. They are also very expert at finding larvæ and all sorts of small worms, of which they are so fond, as to gorge themselves exceedingly. During summer, they occasionally eat little berries and small grains. In autumn, they are fat, and fit for the table, notwithstanding their very diminutive size. The species we are describing, is found in great quantities in the neighbourhood of Nuremberg, in Germany, and sold in the markets of that city, where they command a high price.

Wilson, in his account of the present species, observes, that "the very accurate description given by the Count de Buffon, agrees, in every respect, with ours." Notwithstanding this observation, Buffon's plate and description designate the *Ignicapillus* beyond the possibility of doubt; whilst those of Wilson are intended for the *Cristatus*.

This statement of Wilson, joined to the testimony of Vieillot, would have led us to believe the *Ignicapillus* to be an American bird, if Wilson's description, as well as the inspection of the very individual, and a hundred others, had not confirmed our own belief. It may, however, be considered extraordinary, that so diminutive a being should extend its range so widely, as to participate equally in the bounties of two continents; and that another, so closely allied to it, as to be generally mistaken for a mere variety, should be limited in its wanderings by the boundaries of but one.

That the reader may be assured of the specific difference between these two birds, I add a short comparative description. The *Regulus cristatus* has the bill very feeble, and quite subulate; whilst that of the *Ignicapillus* is also subulate, but is wider at base. The cheeks of the former are pure cinereous, without any white lines, having only a single blackish one through the eye; those of the latter, in addition to the black line through the eye, have a pure white one above, and another below, whence Temminck calls it *Roitelet triple bandeau*. The English name also may be derived from this character, or the bird may rather be called fire-crowned gold-crest, from its Latin name. The crest of the male golden-crowned gold-crest is yellowish orange, that of the fire-crowned is of the most vivid orange; but the most obvious difference is between the females, that of the golden-crowned having a lemon yellow crest, which, in the female of its congener, is orange, like that of the male, only much less vivid. The cheek bands of the female fire-crowned are by no means so obvious, as in its mate; thus the female of this species resembles the male golden-crowned, than which the colours of its crest are not less brilliant. If, to these traits, we add, that the latter is a little larger, we shall complete the enumeration of their differences.

The two species are also somewhat distinguished by their manner of living. The golden-crowned gold-crest associates in small bands, consisting of a whole family, whilst the fire-crowned is only observed in pairs. The latter is more shy, and frequents the tops of the highest trees; whereas, the former is more generally observed amongst low branches and bushes; the voice of the fire-crowned gold-crest is also stronger. Their nests, however, are both of the same admirable construction, having the entrance on the upper part; but the eggs are different in colour, and those of the fire-crowned are fewer in number.

The female golden-crowned gold-crest is three inches and three quarters long, and six in extent. The bill is

black; the feet dusky; the toes and nails wax colour; the irides are dark brown. The frontlet is dull whitish gray, extending in a line over and beyond the eye; above this is a wide black line, confluent on the front, enclosing on the crown a wide longitudinal space of lemon yellow, erectile, slender feathers, with disunited webs; a dusky line passes through the eye, beneath which is a cinereous line, margined below by a narrow dusky one. The cervix and upper part of the body are dull olive green, tinged with yellowish on the rump. The whole inferior surface is whitish; the feathers, like those of the superior surface, being blackish-plumbeous at base. The lesser and middling wing coverts are dusky, margined with olive green, and tipped with whitish; the greater coverts are dusky, the outer ones immaculate, the inner ones have white tips, which form a band on the wings. The inferior wing coverts, and all the under surface of the wings, are more or less whitish gray; the primaries are dusky, with a narrow greenish yellow outer margin, wider at base, and attenuated to the tip, where it is obsolete. The secondaries are dusky; on the outer web, they are *whitish near the base, then black, then with a greenish yellow margin, extending nearly to the tip*; the margin of the inner web is white; the secondaries nearest to the body are, moreover, whitish on the terminal margin. The tail is emarginated; the feathers are dusky olive green on the margin of the outer web; the inner margins, with the exception of the two middle ones, are whitish.

Until their first moult, the young of both sexes are much like the adult female, except in being destitute of the yellow spot on the crest, which is greenish olive. In this state, however, they are not seen here, as they breed farther to the north, and moult before their arrival in the autumn.

GENUS XIII. — *EMBERIZA*, LINNÆUS.27. *EMBERIZA LAPPONICA*, WILSON. — LAPLAND LONGSPUR.

BONAPARTE, PLATE XIII. FIG. I. MALE; FIG. II. FEMALE.

THIS species, long since known to inhabit the desolate arctic regions of both continents, is now for the first time introduced into the Fauna of the United States; having been omitted both in our Synopsis and Catalogue. It is entitled to be ranked among the birds of this country, from the fact, that a few stragglers out of the numerous bands which descend in winter to comparatively warm latitudes, shew themselves almost every year in the higher unsettled parts of Maine, Michigan, and the northwestern territory. Even larger flocks are known not unfrequently to enter the territory of the Union; where, contrary to what is generally supposed, they are observed to alight on trees, as well as on the ground, notwithstanding their long and straight hind nail. We think it highly probable that some individuals, especially in their youth, visit in cold winters the mountainous districts of the Middle States; as they are well known in Europe to wander or stray to the more temperate climates of Germany, France, England, and especially Switzerland; in all which countries, however, the old birds are never seen. It is not extraordinary that they should never have been observed in the Atlantic States, as they are no where found in maritime countries.

No figure of the adult male in perfect plumage has hitherto, we believe, been given; and no representation at all is to be met with in the more generally accessible books, or collections of plates. Mr Selby has lately published a figure of the young in the *Linnean Transactions*, and it will also, we presume, appear in his splendid work, which yields to none but Naumann's, Wolf's, and Wilson's, in point of accuracy and character. That recorded by him appears to be the first instance of an individual having been found in Britain. The

species is common in the hilly districts of eastern Europe, but is chiefly confined within the Polar circle, though found abundantly in all the northern mountainous districts of Europe and Asia, particularly Siberia and Lapland. It is sometimes known to descend in autumn and winter, and, though very rarely, in spring, either singly and astray, or in immense clouds, into the north and middle of Germany. Great numbers were seen in the neighbourhood of Frankfort on the Main, in the middle of November, 1821. In France, they are restricted to the loftiest and most inaccessible mountains, where they are very rare; so much so, that in those of the Vosges, Gerardin only met with a single specimen after six years' researches, though more frequent in the mountains of Dauphiné. They are common during summer in Arctic America; and are found at Hudson's Bay in winter, not appearing before November: near the Severn river they haunt the cedar trees, upon whose berries they feed exclusively. These birds live in large flocks, and are of so social a disposition, that when separated from their own species, or when in small parties, they always join company with the common lark of Europe; or in America, with some of the different snow birds. They feed chiefly on seeds, especially of the dwarf willows growing in frozen and mountainous countries, but occasionally also on leaves, grass, and insects. They breed on small hillocks, in open marshy fields; the nest is loosely constructed with moss and grasses, lined with a few feathers. The female lays five or six oblong eggs, yellowish rusty, somewhat clouded with brown. The Lapland longspur, like the larks, never sings but suspended aloft in the air, at which time it utters a few agreeable and melodious notes.

As may be seen by the synonyms, this bird has been condemned by nomenclators to fluctuate between different genera. But between *Fringilla* and *Emberiza* it is not difficult to decide, as it possesses all the characters of the latter in an eminent degree, even more so than its near relative the snow bunting, which has

never been misplaced. It has even the palatine knob of *Emberiza*, and much more distinctly marked than in the snow bunting (*Emberiza nivalis*.) It has been erroneously placed in *Fringilla*, merely on account of its bill being somewhat wider and more conic.

Meyer has lately proposed for the two just mentioned nearly allied species, a new genus under the name *Plectrophanes*, (corresponding to the English name we have used.) This we have adopted as a subgenus, and are almost inclined to admit as an independent genus being well characterized both by form and habits. The two species of *Plectrophanes*, to which we apply the name of longspur, together with the buntings, are well distinguished from the finches by their upper mandible, contracted and narrower than the lower, their palatine tubercle, &c. From the typical *Emberiza* they differ remarkably by the length and straightness of their hind nail, and the form of their wings, which, owing to the first and second primaries being longest, are acute. In the true buntings, the first quill is shorter than the second and third, which are longest. This species, in all its changeable dresses, may at once be known by its straight and very long hind nail, which is twice as long as the toe. The bill is also stronger and longer than in the other species.

The longspurs are strictly Arctic birds, only descending in the most severe and snowy winters to less rigorous climates, and never to the temperate zone, except on the mountains. Hence they may with the greatest propriety be called snow birds. They frequent open countries, plains, and desert regions, never inhabiting forests. They run swiftly, advancing by successive steps like the larks, (which they resemble in habits, as well as in the form of their hind nail,) and not by hopping, like the buntings. The conformation of their wings also gives them superior powers of flight to their allied genera, the buntings and finches. Their moult appears to be double, and, notwithstanding Temminck's and my own statement to the contrary, they differ much in their summer and winter plumage. Owing to this,

the species have been thoughtlessly multiplied; there are in reality but two, the present, and snow bunting of Wilson.

The male Lapland longspur, in full breeding dress, is nearly seven inches long, and twelve and a quarter in extent; the bill is nearly half an inch long, yellow, blackish at the point; the irides are hazel, and the feet dusky; the head is thickly furnished with feathers; the forepart of the neck, throat, and the breast, are glossy black; the hind-head is of a fine reddish rusty; a white line arises from the base of the bill to the eye, behind which it becomes wider, descending on the sides of the neck somewhat round the breast; the belly and vent are white; the flanks posteriorly with long blackish streaks; the back and scapulars are brownish black, the feathers being skirted with rusty; the smaller wing-coverts are blackish, margined with white; the greater coverts margined with rufous, and white at tip, forming two white bands across the wings; the primaries are blackish, edged with white; secondaries emarginated at tip, dusky, edged with rusty; the wings when closed reach to three-fourths the tail; the tail is two and a half inches in length, rather forked, and of a blackish colour; the outer feather on each side with a white cuneiform spot; and the outer web almost entirely white; the second with a white cuneiform spot only. The hind nail is almost an inch long.

The adult female is somewhat smaller than the male. In spring, she has the top of the head, the shoulders, back, and wing-coverts brownish black, the feathers being edged with rusty; the sides of the head, blackish, intermixed with rusty; over the eyebrows a whitish line, as in the male, tinged with rusty; the nucha and rump are brownish rusty, with small black spots; the throat is white, encircled with brown; remaining inferior parts, white; wings and tail as in the other sex.

The male in autumn and winter has the bill brownish yellow; irides and feet, brownish. Head, black, varied with small spots of rusty; auriculars, partly encircled with black feathers; throat, yellowish white, finely

streaked with deep black. Foreneck and breast, black, mixed with grayish white; the line passing through the eye down the breast, yellowish white, becoming darker on the breast; lower surface from the breast, white, spotted on the flanks. Wings, deep blackish chestnut, crossed by two white lines; primaries on the inside at tip, margined with white. Tail, forked, brownish black, all the feathers margined with rusty, the two outer with a white cuneiform spot at tip.

The dress of the female in autumn and winter is as follows: head, and neck above, shoulders, and back, grayish rusty, with blackish spots, the rusty predominating on the neck and rump; the superciliar line, whitish rusty, uniting with a white streak from the angle of the bill; throat, white each side, with a brownish line; upper part of the breast, grayish, spotted with black; inferior parts, white; the flanks with longitudinal blackish marks.

The young of both sexes, during the first year, are of a yellowish brown above, tinged with grayish, streaked and spotted with blackish, the shafts of the feathers being of that colour; the cheeks and auriculars are brownish, the latter mixed with black; a small blackish spot, that spreads as the bird advances in age, is already visible near the opening of the ears; above the eye is a broad streak of pale brownish; the throat is yellowish white, slightly streaked with brown, and with a blackish line on each side coming from the corner of the lower mandible; the lower portion of the neck and breast is of a dingy, reddish white, more intense, and thickly spotted with blackish brown on the breast and flanks; the belly and vent are almost pure whitish. The wing-coverts and secondaries are blackish brown, margined with dark rusty, and tipped with white; the primaries are dusky brown, paler at the edge. The tail-feathers are dusky, and also margined with deep rusty; the outer bearing a reddish white conic spot, which is merely longitudinal, and narrow on the next. The bill is entirely of a dirty yellowish brown; the feet are dusky brown; the hind nail, though still longer than its toe, is much shorter, and not quite so straight.

GENUS XIV.—*FRINGILLA*.28. *FRINGILLA GRAMMACA*.—LARK FINCH.

BONAPARTE, PLATE V. FIG. III.

For this very interesting new species, Ornithology is again indebted to Long's expedition, and particularly to Say, who gave it the name we have adopted, and informs us, in his notes, that many of these birds were shot in the month of June, at Bellefontaine, on the Missouri; and others were observed, the following spring, at Engineer Cantonment, near Council Bluffs.

It seems probable that the range of this bird is limited, in a great measure, by the Mississippi on the east. Like the larks, they frequent the prairies, and very seldom, if ever, alight on trees. They sing sweetly, and often continue their notes while on the wing.

The lark finch is six inches and a half long; its bill, a little notched at tip, is of a pale horn colour, with a slight elevation on the roof of the upper mandible. The feet are pale flax colour, tinged with orange; the irides are dark brown. On the top of the head are two dilated lines, blackish on the front, and passing into ferruginous on the crown and hind head, separated from each other by a whitish cinereous line; from the eye to the superior mandible is a black line, which, as well as the eye, is enclosed by a dilated white line, contracted behind the eye; from the angle of the mouth proceeds a black line, which is much dilated into a ferruginous spot on the auricles; below this is a broad white line, margined beneath by a narrow black one, originating at the inferior base of the lower mandible; the chin and throat are pure white. The neck above, the back, and rump, are dull cinereous brown, each feather of the interscapular region having a blackish brown disk; the neck beneath and breast, are dull whitish cinereous; a small blackish brown spot is on the middle of the breast; the belly and vent are white. The wings are dusky brown; the lesser wing-coverts are margined with dull cinereous;

the exterior primary is equal to the third; both are very little shorter than the second, which is longest; the outer webs of the second, third, and fourth primaries, being whitish near their bases, form a distinct spot on the wing. The tail is rounded, the feathers being blackish brown; the two intermediate ones are immaculate, somewhat paler than the others. The adjoining ones have a small white spot at tip, which, on the lateral feathers, increases in size, until, on the exterior one, it occupies half the total length of the feather; whilst its exterior web is white to the base.

The female is very similar to the male, but the colours are duller, and the stripes on the head are not so decided; the auriculars, moreover, are yellowish-brown.

This species has the bill and feet precisely similar to those of Wilson's black-throated bunting, and those other *Fringillæ*, and supposed *Emberizæ*, of which I have constituted the sub-genus *Spiza*, in my *Observations on Wilson's Ornithology*. It cannot be mistaken for any other species, being very peculiar in its markings and manners.

29. *FRINGILLA PSALTRIA*, SAY. — ARKANSAW SISKIN.

BONAPARTE, PLATE VI. FIG. III.

"A VERY pretty little bird," writes Say, in his precious zoological notes to the journal of Long's expedition, "was frequently seen hopping about in the low trees or bushes, singing sweetly, somewhat in the manner of the American goldfinch, or hempbird, *Fringilla tristis*. The tints, and the distribution of the colours of its plumage, resemble, in a considerable degree, those of the autumnal and less brilliant vesture of that well known species. It may, however, be distinguished, in addition to other differences, by the black tip of its tail feathers, and the white wing spot."

The Arkansaw siskin inhabits the country near the base of the Rocky Mountains, south of the river Platte,

and probably is also to be found in Mexico. The only specimen brought by the party was shot on the 16th of July, near Boiling Spring Creek.

The Arkansaw siskin is four inches and a quarter long; the bill is yellowish, tipped with blackish; the feet are flesh colour; the irides burnt umber. The top of the head is blue black; the cheeks are dusky olivaceous; the neck above, and half its side, the back, and rump, are olivaceous, more or less intermixed with dusky and yellowish, particularly on the rump; the superior tail-coverts are black, varied with olivaceous; all the under parts, from the very base of the bill to the under tail-coverts, inclusively, are of a pure bright yellow. The wings are brownish black, the smaller wing-coverts being very slightly tinged with blue, and edged with olivaceous; the greater wing-coverts are tipped with white, which forms a narrow band across the wing; the primaries, excepting the exterior one, are slightly edged with white; the third, fourth, fifth, sixth, and seventh, are white towards the base, so as to exhibit a white spot beyond the wing-coverts; the first four primaries are nearly equal in length, the fifth is a quarter of an inch shorter; the secondaries are broadly margined with white exteriorly, towards their tips. The tail is slightly emarginated, the feathers being blackish, slightly edged with dull whitish; the three exterior ones are widely pure white on the middle of their inner webs.

The specimen we have just described is a male, evidently in perfect plumage; the female, and state of imperfect plumage, are unknown; but, without risking any great deviation from the truth, we may state, from analogy, that the young resemble the female, which must be destitute of the black cap, and have the colours less vivid and less pure.

The Arkansaw siskin certainly resembles the American goldfinch in its winter dress; but a still more striking similarity exists in some other birds, such as the European siskin, (*Fringilla spinus*), and the Olivarez, (*Fringilla magellanica*, Vieill.) of South America;

and it is so similar to the European, that it might, with a much greater degree of propriety, be considered as a variety, than those regarded as such by authors. They can, however, be easily distinguished by the following comparative characters: All the under parts of the Arkansaw siskin are bright yellow, whilst the corresponding parts of the European siskin are tinged with greenish, the throat being black, and the belly, vent, and flanks, whitish, spotted longitudinally with black; the margins and spots of the wing and tail-feathers are white in our bird, and yellow in the European siskin; the white spots on the tail of the Arkansaw siskin are confined to the three outer feathers, whilst, in the foreign bird, all the feathers, excepting the two middle ones, are marked with yellow; the bill of our species is also a little shorter, less compressed, and less acuminate; finally, we may notice another trifling difference, which consists in the proportional length of the primaries, the four first being nearly equal in the American bird, and the three first only in the European, the fourth being almost a quarter of an inch shorter. The other approximate species, *Fringilla magellanica*, Vieill. considered by Gmelin and Latham as a variety of the European siskin, is readily distinguishable by having the head entirely black.

Though the Mexican siskin (*Fringilla mexicana*, Gmel.) may prove to be the female of our bird, or the male in an imperfect state of plumage, (and, from the locality, we should possibly have referred it to that name, had the classification of it fallen to our lot,) yet, as nothing positive can be drawn from so unessential an indication as that of the Mexican siskin, we have no hesitation in following the same course with Say, who considers it as entirely new, and have retained his elegant name of *Fringilla psaltria*. It is very possible that not only the *Fringilla mexicana*, but also the Black Mexican siskin, (*Fringilla catotol*, Gmel.) may be the same bird as our *Fringilla psaltria*; but how can we determine, from the vague descriptions that have been given of those species? They are equally appli-

cable to the American goldfinch in its dull state of plumage; and Wilson expresses a doubt whether or not the black Mexican siskin is the same as his new species, *Fringilla pinus*.

All these pretty little birds belong to the subgenus *Carduelis*, having a more slender, acute, and elongated bill, than other *Fringillæ*.

30. *FRINGILLA TRISTIS*, LIN. — FEMALE AMERICAN GOLDFINCH.

BONAPARTE, PLATE VI. FIG. IV.

THE very great dissimilarity between the sexes in their spring dress, will justify the reappearance of a bird already given by Wilson, more especially as it has, in this state, been mistaken for a distinct species, and most unaccountably arranged in the systems as a variety of the European siskin.

The history of this bird, which so completely resembles the goldfinch of Europe in song and habits, being nearly completed by the golden pen of Wilson, we shall not attempt to add any observations of our own, but shall refer the reader to his volume (Vol. II. p. 262) for its biography. As we cannot but observe that his description is short and somewhat imperfect, probably owing to the opinion he at first entertained, but afterwards judiciously relinquished, that a minute description of common birds is superfluous, we shall proceed to describe the species in all its different states.

The male American goldfinch in summer dress, described by Wilson, is four and a half inches long, and eight in extent. The bill resembles that of the European goldfinch, and, as well as the feet, is of a reddish cinnamon colour; the irides are dark brown; the front and vertex are glossy black; the remaining part of the head, and all the body, rich lemon yellow; the superior and inferior tail-coverts are white, as well as the thighs; the wings and tail are black, the small coverts of the wings being yellow externally, and white on the inner side and at tip; the greater coverts are

tipped with white, an arrangement which exhibits two white bands across the wings; the first and third primaries are equal, hardly shorter than the second, which is the longest, the fourth being nearly as long as the third; the secondaries are margined with white. The tail is emarginated, the feathers being black, slightly edged with white, and having a large pure white spot on the inner web at tip.

The female, as is usual in this family of birds, is rather smaller than the male, and is widely different from that sex in the colours of its plumage. The bill and feet are brownish; the lower mandible is whitish at base; the head has no appearance of black, and, with the neck, the back, and rump, is brownish olive, the latter part being of a lighter shade than the preceding portions; the upper tail-coverts are greenish white; the frontlet, cheeks, sides of the neck, throat, and upper part of the breast, are pale greenish yellow; the lower portion of the breast, belly, vent, flanks, under wing and under tail-coverts, are whitish. The wings and tail, which always afford the most constant specific characters, are like those of the male, except that the black colour is less intense, and the white is less pure, being slightly tinged with rufous.

In this state of plumage, the bird closely resembles the *Fringilla citrinella* of the south of Europe, which, however, can always be distinguished from it by several characters, but more particularly by its greenish yellow rump, and by being destitute of the whitish spot at the tip of the inner web of the tail feathers. The young are so like the females as to be distinguished with difficulty; their colours, however, are still less lively; they assume the adult livery in the spring, but do not exhibit all the brilliancy of the perfect bird until the third moult.

The American goldfinch moults twice a-year, in the seasons of spring and autumn. At the spring moult the males obtain their vivid colouring, which is lost at the autumnal change, and replaced by a more humble dress, similar to that of the female, from which sex

they cannot then be readily distinguished. The black of the wings is, however, somewhat more intense; the white of the wings and of the tail is dull and dirty, and a yellowish tint prevails around the eyes, as well as on the neck.

As the season advances, the plumage of the adult male gradually changes, but not simultaneously in the different individuals, so that in the spring and autumn we rarely find two that are alike; some being more or less yellow, having a rudiment of black on the head, &c. according as the moulting process is more or less advanced.

A remarkable variety is exhibited in a changing male, which I shot near Philadelphia, in the month of April, and which is therefore considerably advanced towards perfect plumage. All the primaries are pure white on the outer web towards the base, thus constituting, in the most obvious manner, that white spot beyond the wing-coverts, assigned by Say as a good discriminating mark between this species and the preceding. The fact we have related diminishes the value of this character, which is nevertheless a very good one; but as many other distinctions are observable, we need not rely exclusively upon it. The deviation we have here mentioned is the more remarkable, as the greater number of species allied to this bird have that spot, either white or yellow.

Since writing the above, I obtained, from one of the large flocks in which these birds congregate in the autumn, several specimens of both sexes, more or less distinguished by the marking above stated as peculiar to the variety.

31. *FRINGILLA AMÆNA*, BONAPARTE.

LAZULI FINCH.

BONAPARTE, PLATE VI. FIG. V.

THE genus *Emberiza*, though very natural, and distinguished by well marked characters, has, notwith-

standing these advantages, been often misunderstood; and authors, without consulting the boundaries assigned to it by themselves, have recorded a copious list of species, whilst in nature its limits are much restricted. We are not, therefore, surprised, that so acute a zoologist as Say should have arranged his bird in that genus, particularly as it is more closely allied to *Emberiza* than many of those, not only of Wilson, but even of Linné and Latham.

This bird, which we have no hesitation in pronouncing one of the most beautiful of its tribe, would be placed by Vieillot in his genus *Passerina*; but, according to my classification, it belongs to the genus *Fringilla*, and to that American sub-genus lately established in my "*Observations on the Nomenclature of Wilson's Ornithology*," under the name of *Spiza*. As a species, it is more intimately allied to *Fringilla ciris* and *Fringilla cyanea*,* which I stated in that paper to differ so much from their congeners, particularly in the greater curvature of the upper mandible, as to deserve, perhaps, a separation into a small sub-genus by themselves: this would unite *Fringilla* to *Tanagra*, as *Spiza*, on the other hand, shews its transition to *Emberiza*.

The lazuli finch is five inches and three quarters long; the bill is formed like that of the Indigo bird, (*Fringilla cyanea*, Wilson,) but is emarginated near the tip, being horn colour, as well as the feet; the irides are dark brown; the whole head and neck are brilliant verdigrise blue; the back is brownish black, intermixed with blue, and a little ferruginous brown; the rump is pure verdigrise blue; the superior portion of the breast is pale ferruginous; the lower part of the breast, the belly, and inferior tail-coverts, are white; the smaller wing-coverts are blue; the middling-coverts are blackish at base, and broadly tipped with white, forming a wide band across the wing; the greater wing-coverts are

* Its relation to *Fringilla cyanea*, considered as an *Emberiza*, probably induced Say to place it under that genus.

blackish, obscurely margined with blue, and slightly tipped with white on the exterior web, constituting a second band across the wings parallel to the first, but much narrower; the primaries and secondaries are blackish, obscurely margined with blue on the outer web; the under wing-coverts are whitish, a little intermixed with blue. The tail is slightly emarginated, the feathers being blackish, edged with blue on the outer web, and with white on the inner web at tip.

The above description of this handsome bird is taken from a male in summer plumage, the only specimen brought by Long's exploring party: hence we are unable to give any positive information relative to the female and young, though, from analogy, we must believe them in great part destitute of the blue colour, and otherwise less brilliantly adorned.

This species appears to be rather rare; it is found along the Arkansas river, near the base of the Rocky Mountains, during the summer months; they frequent the bushy valleys, keeping much in the grass, and seldom alight on shrubs or trees. In this respect, also, they resemble the Indigo bird, and probably their habits are the same, although the note is entirely dissimilar.

32. *FRINGILLA VESPERTINA*, COOPER.

EVENING GROSBEAK.

BONAPARTE, PLATE XV. FIG. I.

Few birds could form a more interesting acquisition to the Fauna of any country than this really fine grosbeak. Beautiful in plumage, peculiar in its habits, important to systematical writers, it combines advantages of every kind. It was named and first described by Mr Cooper, and little has since been discovered of its history to be added to the information he has collected and given us in the journal above quoted. The species appears to have an extensive range in the northern and north-western parts of this continent, being met with from the extremity of the Michigan

Territory to the Rocky Mountains, within the same parallels. It is common about the head of Lake Superior, at Fond du Lac, and near the Athabasca Lake. A few were observed by Mr Schoolcraft, during the first week of April, 1823, about Sault Sainte Marie, Michigan Territory, where they remained but a short time, and have not appeared since; and by Major Delafield, in the month of August of the same year, near the Savannah river, north-west from Lake Superior. They appear to retire during the day to the deep swamps of that lonely region, which are covered with a thick growth of various trees of the coniferous order, and only leave them in small parties at the approach of night. Their note is strange and peculiar; and it is only at twilight that they are heard crying in a singular strain. This mournful sound, uttered at such an unusual hour, strikes the traveller's ear, but the bird itself is seldom seen; though, probably from its unacquaintance with man, it is so remarkably tame and fearless as almost to suffer itself to be caught with the hand.

The specimen of the evening grosbeak presented to the Lyceum of New York, by Mr Schoolcraft, from which Mr Cooper established the species, was thought, until lately, the only one in possession of civilized man; but we have since examined two others shot early in the spring on the Athabasca Lake, near the Rocky Mountains, and preserved among the endless treasures of Mr Leadbeater of London. The subjoined description is carefully drawn up from a perfect specimen now before us, which Mr Leadbeater, with the most obliging liberality, has confided to our charge.

Although we consider the grosbeaks (*Coccothraustes*) as only a subgenus of our great genus *Fringilla*, they may with equal propriety constitute one by themselves; as the insensible degrees by which intermediate species pass from one form into another, (which determined us in considering them as a subgenus, and not a genus,) are equally observable between other groups, though admitted as genera. *Coccothraustes* is as much entitled

to be distinguished generically from *Fringilla*, as *Turdus* from *Sylvia*; and at all events, its claim is full as good, and perhaps better, than its near relation *Pyrrhula*. In the present work, however, we have preferred retaining things as we found them, until we can apply ourselves to the work of a general reform, as announced in the first article of this volume. Though we regard the grosbeaks as a subgenus, others, going to the opposite extreme, have erected them into a separate family, composed of several genera. The evening grosbeak is, however, so precisely similar in form to the hawfinch-type of the group, as to defy the attempts of the most determined innovators to separate them. Its bill is as broad, as high, quite as strong and turgid, with both mandibles equal, the upper depressed and rounded above, and the commissure straight. It conforms even, in a slight degree, in the rhomboidal shape of the ends of the secondaries,—a character so conspicuous in its analogue; to which, in the distribution and transitions of its tints, though very different, it also bears a resemblance. It is, however, of the four North American species of its group, the only one so strictly allied, for even the cardinal grosbeak, the most nearly related of these species, on account of its short rounded wings and other minor traits, might be separated, though fortunately it has not been as yet, to our knowledge; the others have already.

The evening grosbeak is eight and a half inches long; its bill is of a greenish yellow, brighter on the margins, seven-eighths of an inch long, five-eighths broad, the same in height; the capistrum and lora are black; the front is widely bright yellow, prolonged in a broad stripe over the eye to the ears; the hind crown is black, intermixed with yellow, visible only on separating the feathers, but leading to the suspicion that at some period the yellow extends perhaps all over the crown; the sides and inferior parts of the head, the whole neck, above and beneath, together with the interscapulars and breast, are of a dark olive brown, becoming lighter by degrees; the scapulars are yellow, slightly tinged

with greenish ; the back, rump, with the whole lateral and inferior surface, including the under wing and under tail-coverts, yellow, purer on the rump, and somewhat tinged with olive-brown on the belly. Although these colours are all very pure, they are not definitely separated, but pass very insensibly into each other ; thus the black of the crown passes into the dark brown of the neck, which, becoming lighter by degrees, is blended with the yellow of the back. The same thing takes place beneath, where the olive-brown of the breast passes by the nicest gradations into the yellow of the posterior parts ; the whole base of the plumage is pale bluish plumbeous, white before the tips of the feathers ; the femorals are black, skirted with yellow ; the wings are four and a half inches long ; the smaller, middling, and exterior larger wing-coverts are deep black, as well as the spurious wing ; those nearest the body are white, black at the origin only ; the quills are deep black, the three outer being subequal and longest, attenuated on their outer web at the point, and inconspicuously tipped with whitish ; the secondaries are marked with white on their inner web, that colour extending more and more as they approach the body, the four or five nearest being entirely pure white, like their immediate coverts, and slightly and inconspicuously edged with yellow externally ; the tail is two and a half inches long, slightly forked, and, as well as its long superior coverts, very deep black ; the outer feather on each side has, on the inner vane, towards the tip, a large, roundish, white spot, which seems disposed to become obliterated, as it is much more marked on one, than on that of the other side which corresponds to it, and does not exist in all specimens ; a similar spot is perceptible on the second tail-feather, where it is, however, nearly obliterated ; the feet are flesh colour, the nails blackish, the tarsus measuring three quarters of an inch.

No difference of any consequence is observable between the sexes ; though it might be said that the female is a little less in size, and rather duller in plumage.

33. *FRINGILLA LUDOVICIANA*, BONAPARTE.

FEMALE ROSE-BREASTED GROSBEEK.

BONAPARTE, PLATE XV. FIG. II.

THOUGH several figures have been published of the very showy male rose-breasted grosbeak, the humble plumage of the female and young has never been described. It would, however, have better served the purposes of science, if the preference had been given to the latter, though less calculated to attract the eye, inasmuch as striking colours are far less liable to be misunderstood or confounded in the description of species, than dull and blended tints. It will be seen by the synonymy, that nominal species have in fact been introduced into the systems. But if it be less extraordinary that the female and young should have been formed into species, it is certainly unaccountable that the male itself should have been twice described in the same works, once as a finch, and once as a grosbeak. This oversight originated with Pennant, and later compilers have faithfully copied it, though so easy to rectify.

The female rose-breasted grosbeak is eight inches long, and twelve and a half inches in extent. The bill has not the form either of the typical grosbeaks, or of the bullfinches, but is intermediate between them, though more compressed than either; it is three quarters of an inch long, and much higher than broad; instead of being pure white, as that of the male, it is dusky horn colour above, and whitish beneath and on the margins; the irides are hazel brown; the crown is of a blackish-brown, each feather being skirted with light olive-brown, and faintly spotted with white on the centre; from the nostrils a broad band passes over the eye, margining the crown to the neck; a brown streak passes through the eye, and the inferior orbit is white; more of the brown arises from the angle of the mouth, spreading on the auriculars; on the upper part of the

neck above, the feathers are whitish, edged with pale flaxen, and with a broad, oblong, medial, blackish brown spot at tip; on the remaining part of the neck and interscapulars this blackish spot is wider, so that the feathers are properly of that colour, broadly edged with pale flaxen; the back and rump, and the upper tail-coverts, are of a lighter brown, with but a few merely indicated and lighter spots; the whole inferior surface of the bird is white, but not very pure; the sides of the throat are dotted with dark brown, the dots occupying the tips of the feathers; the breast and flanks are somewhat tinged with flaxen, (more dingy on the latter,) and each feather being blackish along the middle at tip, those parts appear streaked with that colour; the middle of the throat, the belly, and under tail-coverts, are unspotted; the base of the plumage is every where plumbeous; the wings are rounded, less than four inches long, entirely dusky brown, somewhat darker on the spurious wing, all the feathers, both quills and coverts, being lighter on their edges; the exterior webs of the middle and larger wing-coverts are whitish at tip, constituting two white bands across the wings; the primaries are whitish at the origin beneath the spurious wing; the secondaries are inconspicuously whitish externally at tip, that nearest the body having a very conspicuous whitish spot; the lower wing-coverts are of a bright buff; and as they are red in the male, afford an excellent essential character for the species; the tail is three inches long, nearly even, and of a paler dusky brown; the two outer feathers are slightly edged internally with whitish, but without the least trace of the large spot so conspicuous in the male, and which is always more or less apparent in the young of that sex; the feet are dusky, the tarsus measuring seven-eighths of an inch.

The young male is at first very similar to the female, and is, even in extreme youth, paler and somewhat more spotted, but a little of the beautiful rose colour, of which the mother is quite destitute, soon begins to make its appearance, principally in small dots on the

throat : this colour spreads gradually, and the wings and tail, and soon after the head, blacken, of course presenting as they advance in age a great variety of combinations.

For the description of the beautiful adult male, we shall refer to Wilson, whose description is good, but not having stated any particulars about the habits of the species, we shall subjoin the little that is known of them. Though long since recorded to be an inhabitant of Louisiana, whence it was first received in Europe, recent observations, and the opinion of Wilson, had rendered this doubtful, and it was believed to be altogether an arctic bird, averse to the warm climate of the Southern States, and hardly ever appearing even in the more temperate. Its recent discovery in Mexico is, therefore, a very interesting and no less remarkable fact, and we may safely conclude that this bird migrates extensively according to season, spending the summer in the north, or in the mountains, and breeding there, and in winter retiring southward, or descending into the plains ; being, however, by no means numerous in any known district, or at any season, though perhaps more frequent on the borders of Lake Ontario. Its favourite abode is large forests, where it affects the densest and most gloomy retreats. The nest is placed among the thick foliage of trees, and is constructed of twigs outside, and lined with fine grasses within ; the female lays four or five white eggs, spotted with brown. This may also be called an " evening grosbeak," for it also sings during the solemn stillness of night, uttering a clear, mellow, and harmonious note.

We have placed this species in our subgenus *Coccothraustes*. It is probably because he laboured under the mistake that all the grosbeaks removed from *Loxia* had been placed in *Pyrrhula* by Temminck, that Mr Sabine has made it a bullfinch ; and in truth the bill very much resembles those of that genus, so that the species is intermediate between the two. Mr Swainson places it, together with the blue grosbeak, *Fringilla* (*Coccothraustes*) *cærula*, in a new genus which he calls *Guiraca*, but without as yet characterizing

it. These species have, it is true, a bill somewhat different from that of the typical *Coccothraustes*, being much less thick and turgid, and higher than broad; the upper mandible being larger than the lower, and covering its margins entirely, compressed on the sides, making the ridge very distinct, (not rounded above,) and curved from the base, but at tip especially: the margins of both are angular.

34. *FRINGILLA CYANEA*, BONAPARTE.

FEMALE INDIGO FINCH.

BONAPARTE, PLATE XV. FIG. IV.

THE remarkable disparity existing between the plumage of the different sexes of the common indigo bird renders it almost indispensably requisite that the female, unaccountably neglected by Wilson, as he generally granted this distinction in similar, and often in less important, cases, should be described in this work. Hardly any North American bird more absolutely stands in need of being thus illustrated than the beautiful finch which is now the subject of our consideration. It could scarcely be expected that the student should easily recognize the brilliant indigo bird of Wilson's second volume in the description which is now given of it. But, however simple in its appearance, the plumage of the female is far more interesting and important than that of the male, as it belongs equally to the young, and to the adult male after the autumnal moult, and previous to the change which ensues in the spring,—a large proportion of the life of the bird.

The importance of a knowledge of these changes will also be duly estimated on recurring to the copious synonymy, by which it will be seen that several nominal species have been made by naturalists who chanced to describe this bird during its transitions from one state to another. Errors of this kind too frequently disfigure the fair pages of zoology, owing to the ridiculous

ambition of those pseudo naturalists, who, without taking the trouble to make investigations, for which indeed they are perhaps incompetent, glory in proclaiming a new species established on a single individual, and merely on account of a spot, or some such trifling particular! The leading systematists who have enlarged the boundaries of our science have too readily admitted such species, partly compelled to it perhaps by the deficiency of settled principles. But the more extensive and accurate knowledge which ornithologists have acquired within a few years relative to the changes that birds undergo, will render them more cautious, in proportion as the scientific world will be less disposed to excuse them for errors arising from this source. Linné may be profitably resorted to as a model of accuracy in this respect, his profound sagacity leading him in many instances to reject species which had received the sanction even of the experienced Brisson. Unfortunately Gmelin, who pursued a practice directly the opposite, and compiled with a careless and indiscriminating hand, has been the oracle of zoologists for twenty years. The thirteenth edition of the *Systema Naturæ* undoubtedly retarded the advancement of knowledge instead of promoting it, and if Latham had erected his ornithological edifice on the chaste and durable Linnean basis, the superstructure would have been far more elegant. But he first misled Gmelin, and afterwards suffered himself to be misled by him, and was, therefore, necessarily betrayed into numerous errors, although he at the same time perceived and corrected many others of his predecessor. We shall not enumerate the nominal species authorized by their works in relation to the present bird, since they may be ascertained by consulting our list of synonyms. On comparing this list with that furnished by Wilson, it will be seen that the latter is very incomplete. Indeed, as regards synonymy, Wilson's work is not a little deficient; notwithstanding which, however, it will be perpetuated as a monument of original and faithful

observations of nature, when piles of pedantic compilations shall be forgotten.

We refer our readers entirely to Wilson for the history of this very social little bird, only reserving to ourselves the task of assigning its true place in the system. As we have already mentioned in our "Observations," he was the first who placed it in the genus *Fringilla*, (to which it properly belongs,) after it had been transferred from *Tanagra* to *Emberiza* by former writers, some of whom had even described it under both in one and the same work. But although Wilson referred this bird to its proper genus, yet he unaccountably permitted its closely allied species, the *Fringilla ciris*, to retain its station in *Emberiza*, being under the erroneous impression that a large bill was characteristic of that genus. This mistake, however, is excusable, when we consider that almost all the North American birds which he found placed in it, through the negligence or ignorance of his predecessors, are in fact distinguished by large bills.

The transfer of this species to the genus *Fringilla*, renders a change necessary in the name of *Loxia cyanea* of Linné, an African bird, now a *Fringilla* of the subgenus *Coccothraustes*. The American bird belongs to *Spiza*, and, together with the *Fringilla ciris* and the beautiful *Fringilla amæna*, it may form a peculiar group, allied to *Fringilla*, *Emberiza*, and *Tanagra*, but manifestly nearest the former.

The adult male, in full plumage, having been described by Wilson, may be omitted here. The female measures four inches and three quarters in length, and nearly seven in extent. The bill is small, compressed, and less than half an inch long, is blackish above and pale horn colour beneath; the irides are dark brown; above she is uniformly of a somewhat glossy drab; between the bill and eyes, and on the cheeks, throat, and all the inferior parts, of a reddish clay colour, much paler on the belly, dingy on the breast, and strongly inclining to drab on the flanks, blending into the colour of the back, the shafts of the feathers being darker, giving somewhat

of a streaked appearance ; the whole base of the plumage is lead colour ; the wings and tail are of a darker and less glossy brown, each feather being edged with lighter, more extended on the secondaries, and especially the wing-coverts ; the wings are two inches and a half long, not reaching, when folded, beyond the tail-coverts ; the first primary is subequal to the fourth, the second and third being longest ; the three outer, besides the first, are greatly attenuated on the outer web, half an inch from the point, where it is extremely narrow ; the tail is two inches in length, and but slightly emarginated ; the feet are dusky, the tarsus measuring three-quarters of an inch.

The male, after his autumnal moult, exhibits pretty much the same dress, except being more or less tinged with bluish. We shall here observe, that we do not believe that the individual kept by Wilson in a cage through the winter, in which the gay plumage did not return for more than two months, formed an exception to the general law, as he supposed. We have no doubt that this circumstance is characteristic of the species in its wild state.

The young strongly resemble the female ; the drab colour is, however, much less pure and glossy, being somewhat intermixed with dusky olive, owing to the centre of the feathers being of the latter hue. Consequently, during the progress from youth to adolescence, and even during the two periodical changes, the plumage of this bird is more or less intermixed with drab, blue, and white, according to the stage of the moulting process, some being beautifully and regularly spotted with large masses of those colours symmetrically disposed. In one of these males, but little advanced in its changes, we readily recognize the *Emberiza cærulea* of authors, *Azuroux* of Buffon, &c. ; and in another, which has made farther progress towards the perfect state, the shoulders only retaining the ferruginous tinge, we can trace the *Emberiza cyanella* of Sparmann.

GENUS XV.—PYRRHULA.

35. PYRRHULA FRONTALIS, BONAPARTE.

CRIMSON-NECKED BULLFINCH.

BONAPARTE, PLATE VI. FIG. I. MALE. — FIG. II. FEMALE.

MUCH confusion exists in the works of naturalists respecting those finches and bullfinches that are tinged with red; and, in fact, their great resemblance to each other, and their intricate synonymy, render them very difficult to elucidate. The only species in Wilson's work with which the present may be confounded is the *Fringilla purpurea*, a bird closely related to ours, and for the first time well described and permanently established by that author.* But several other allied species may be mistaken for the crimson-necked bullfinch; two of these, belonging to the genus *Pyrrhula*, present so much analogy with the present species, judging from their descriptions, that we doubted the correctness of giving the latter a separate place, con-

* He was rather precipitate in asserting the *Fringilla rosea* and *Loxia erythrina* to be identical with his bird, as they are actually two very distinct species, belonging to the genus *Pyrrhula*, and proper to the old continent, whilst the *Purpurea* is a true *Fringilla*, and peculiar to America. To those who have not critically investigated the subject, it may appear somewhat inconsistent to state, that the *Erythrina* is not an inhabitant of this continent, when it is a well known fact, that many authors speak of it as an American bird. This apparent contradiction may be readily removed by considering what bird those authors alluded to when they stated the *Erythrina* to be a native of North America. When Latham expressed a doubt in his Synopsis, whether the birds in the neighbourhood of New York, so much resembling the *Erythrina*, were not specifically the same, he alluded to the *Fringilla purpurea*. Gmelin, as usual, in his miserable compilation, inserted this doubt of Latham as a certainty. As to the crimson-headed finch of Pennant, it is evidently the *Purpurea*, thus excusing, in part, the strange assertion of Wilson. Latham also committed an error in his index, by placing the *Loxia erythrina* of Pallas and Gmelin, his own crimson-headed finch, as a variety of *Fringilla rosea*.

sidering it identical with *Pyrrhula erythrina* of Temminck, whose description agrees better with it than that of any other. Yet, in addition to some differences discoverable by comparing the crimson-necked bullfinch with his description, we cannot admit, that an arctic bird of the old continent, known to visit even the more northern portion of the temperate climates only during very cold winters, and then not very regularly, should be found, in the month of July, on the sultry plains of the Arkansaw, and of course breeding there. We therefore conclude that our bird is not the *erythrina*, although we regret our inability to give differential characters, having never seen that species, as our endeavours to obtain a specimen have not been attended with success. The southern residence of our bird might lead us to suppose it the *Loxia (Pyrrhula) violacea*, which we have not seen, neither do we think the species well established. But if we are to rely on the short description given of it, and on Catesby's figure, we cannot perceive much resemblance between them; their identity, however, would not much surprise us, when we consider that Catesby's figure of the *Pyrrhula violacea* is as much like our bird as his figure of the purple finch is like what it is intended to represent. Having the authority of Say, we consider it as new, notwithstanding these doubts.

The crimson-necked bullfinch was procured by Long's party, near the Rocky Mountains, and Say described it in the journal of that expedition, under the name of *Fringilla frontalis*, adopting that genus in the comprehensive limits assigned by Illiger and Cuvier. The specific name given by Say is preoccupied in that genus by an African species; but, as we consider our bird a *Pyrrhula*, we think proper to retain his name.

The crimson-necked bullfinch is five inches and a half long. The bill and feet are horn colour; the lower mandible is paler; the irides are dark brown; the head, neck beneath, and superior portion of the breast, are brilliant crimson, most intense near the bill and over the eye; the space between the bill and the eye

is cinereous gray, as well as the cheeks, and the small feathers immediately around the bill; the crimson feathers are brown at base, being red only at tip; the occiput, and the neck above and on each side, are brown, with a reddish cast, the feathers being margined with pale; the back is dusky brownish; the rump and superior tail-coverts are crimson, but less vivid than that of the head; the inferior portion of the breast, the belly, and vent, are whitish, each feather having a broad fuscous line; the general plumage is lead colour at base. The wings are blackish brown, the primaries being broadly margined within, towards the base, with whitish, and exteriorly edged with grayish; the coverts and secondaries are edged with dull grayish; the tail is blackish brown, hardly emarginated; the lateral feathers are edged, on the inner side, with whitish.

Such is the description of our male specimen; but as it was procured when summer was far advanced, a season in which the plumage begins to fade, it is proper to observe, that the colouring of this bird is probably much more brilliant in its full spring dress, the crimson extending much farther down on the back, &c. As the season advances, the tips of the feathers, which are the only parts of a crimson colour, being gradually worn off, the bird as gradually loses its brilliancy; and, in the autumnal and winter plumage, exhibits the humble appearance of the female.

The female is altogether destitute of the brilliant colour, being dusky brown above, the feathers margined on each side with dull whitish; the whole inferior surface is whitish, each feather having a brown longitudinal line in the middle, obsolete on the vent, which is almost pure white.

A change similar to that above mentioned, takes place in the purple finch, whose habits also much resemble those of the crimson-necked bullfinch; but the form of its bill is certainly that of a finch, and will always distinguish it from the species we are describing, the bill of which is unequivocally of the bullfinch form. The different tints of red adorning these birds, will

also at once strike the eye of the least expert in discriminating species; in the present bird, the tint is vivid crimson, whilst in the purple finch, it is rosaceous. In addition to these characters, the latter is a somewhat larger bird, with a pure white belly and inferior tail-coverts, and a deeply emarginated tail; whilst the former has a nearly even tail, and its belly and inferior tail-coverts are striped with dusky.

Some persons, without doubt, may think it highly improper to separate generically two birds, so closely allied as the present species and the purple finch, which may be mistaken for the same species; but we may remark, that they stand at the extreme limit of their respective genera, and form the links of union between *Pyrrhula* and *Fringilla*. It is true, that the intimate alliance of these two groups would seem to justify Illiger, Meyer, and others, in uniting them under the same genus; but, as *Fringilla* is so vast in the number of its species, and *Pyrrhula* has a few distinctive characters, we choose to follow Temminck, Vieillot, and other naturalists, by arranging them generically separate. The closeness of affinity between these two birds, when thus properly disposed, affords no good reason for the unity of their genera; for, if we proceed to the abolition of all artificial distinction between genera united by almost imperceptible gradations, *Sylvia* would be joined to *Turdus*, *Myiothera* to *Troglodytes*, *Lanius* to *Muscicapa*, the whole of these would be confused together; and, in fact, orders and classes would be considered as genera; and even the vast groups, thus formed, would be still observed to unite inseparably at their extremes, and we should finally be compelled to consider all living bodies, both animal and vegetable, as belonging to one genus. This argument, however, may not convince every naturalist of the propriety of our arrangement, and they must, therefore, place the two species, strictly according to nature, in one genus, and consider the present as a *Fringilla*; but how unnatural will then be the situation of *Pyrrhula vulgaris*, and *Pyrrhula enucleator*!

The inflated form of the bill, the curvature of both mandibles, very apparent in the superior one, as well as the compression of both at tip, are obvious characters, which distinguish the species of *Pyrrhula* from the *Fringillæ*, in which both mandibles are nearly straight, and present a conic form on every side.

Berries, and seeds which they extract from the pericarp, buds, and young shoots of different plants, constitute the food of the bullfinches. They generally frequent forests and bushy places, building their nests on small trees, or low branches of large ones: the females lay four or five eggs. The greater number of the species moult twice a year; the sexes differ considerably in appearance. They reside in cold and temperate climates, with the exception of a few species, that inhabit Africa and South America.

The crimson-necked bullfinch is found in the district of country extending along the base of the Rocky Mountains, near the Arkansaw river, and has not been observed elsewhere. In the month of July, when our specimens were obtained, these birds occur in small scattered flocks, keeping mostly on the tops of the cotton-wood trees, on whose buds they partially feed, Their voice considerably resembles that of their relative, the *Fringilla purpurea*.

36. *PYRRHULA ENUCLEATOR*. — FEMALE PINE BULLFINCH.

BONAP. PLATE XVI. FIG. III. — EDINBURGH COLLEGE MUSEUM.

THE female pine bullfinch is eight and a half inches long, and thirteen and a half in extent; the bill measures more than half an inch, is blackish, with the lower mandible paler at base; the feathers of the whole head, neck, breast, and rump, orange, tipped with brownish, the orange richer on the crown, where are a few blackish dots, the plumage at base plumbeous; the back is cinereous, somewhat mixed with orange; the shafts darker; belly and femorals, pure cinereous; lower tail-coverts, whitish, shafted with dusky; the

wings are four and a half inches long, reaching beyond the middle of the tail; the smaller coverts are similar to the back, cinereous slightly tinged with orange; middle and larger, blackish, margined with whitish exteriorly and widely at tip; the lower coverts are whitish gray; quills, blackish, primaries, margined with pale greenish orange, secondaries and tertials with broad white exterior margins; the tail is three and three quarter inches long, blackish; the feathers with narrow pale edges; feet, dusky; nails, blackish.

In the young female, the head and rump are tinged with reddish. The male most accurately described by Wilson, is not adult, but full one year old; at which period, contrary to the general law of nature, it is the brightest, as was first stated by Linné, though his observation has since been overlooked, or unjustly contradicted. In the adult male, the parts that were crimson in the immature bird, exhibit a fine reddish orange, the breast and belly being also of that colour, but paler; the bars of the wings, tinged with rose in the young, become pure white.

We have nothing to add to Wilson's history of this bird. Although, after the example of Temminck and others, we place this species at the head of the bullfinches, we cannot avoid remarking, that its natural affinities connect it most intimately with the crossbills, being allied to them closely in its habits, and in its form, plumage, and general garb, even in its anomalous change of colours. The bill, however, precisely that of a bullfinch, induces us to leave it in that genus, between which and the crossbills it forms a beautiful link; the obtuse point of the lower mandible, but especially the small, porrect, setaceous feathers covering the nostrils, as in these latter, eminently distinguish it from all others of its own genus. These characters induced Cuvier to propose it as a subgenus, under the name of *Corythus*; and Vieillot as an entirely distinct genus, which he first named *Pinicola*, but has since changed it to *Strobilophaga*. These authors have of course been followed by the German and English

ornithologists of the new school, who appear to consider themselves bound to acknowledge every genus proposed, from whatever quarter, or however minute and variable the characters on which it is based.

GENUS XVI.—*LOXIA*.37. *LOXIA LEUCOPTERA*. — FEMALE WHITE-WINGED CROSSBILL.

BONAPARTE, PLATE XV. FIG. III.

THE white-winged crossbill, first made known by Latham in his celebrated *Synopsis*, was subsequently introduced on his authority into all the huge compilations of the last century. Wilson introduced the male, and promised the female, together with "such additional facts, relative to its manners, as he might be able to ascertain." It is to fulfil Wilson's engagement that we now endeavour to describe minutely the other sex, in all its different states of plumage. This has never before been done, though Vieillot, since Wilson's time, has compiled some account of its habits, described the female, and recently published a bad enough figure of the male in his *Galerie des Oiseaux*.

The English name was bestowed by its discoverer, the scientific was imposed on by the compiler, Gmelin, who, like the daw in the fable, though with much better success, appropriated to himself the borrowed plumes of others, making Latham's new species his own, by being the first to give them scientific names, which the discoverer himself was afterwards obliged to adopt in his *Index Ornithologicus*. In the present instance, however, he took the liberty of altering Gmelin's name, most probably with the view of giving one analogous to that of *Loxia curvirostra*, and indicative of the remarkable form of the bill. That character having since been employed as generic, the propriety of Latham's change has ceased to exist, and in fact the advantage is altogether on the side of Gmelin. We have therefore respected the right of priority, even in the case of an usurper.

The female white-winged crossbill is five inches and three quarters long, and nearly nine in extent; the bill is more than five-eighths long, of a dark horn colour, paler on the edges; as is the case in the whole genus, it is very much compressed throughout, but especially at the point, where the edges almost unite into one: both mandibles are curved (the lower one upwards) from the base, the ends crossing each other; the upper has its ridge distinct, and usually crosses to the left in both sexes, and not, as Wilson appears to intimate, generally in one sex only; the lower mandible is considerably shorter; the tongue is short, cartilaginous, and entire; the irides are of a very dark hazel; the small setaceous feathers covering the nostrils, which is one of the characteristics of the genus, are whitish gray; the bottom of the plumage is every where slate colour; the head, and all the upper parts down to the rump, are of a grayish green strongly tinged with olive, each feather being marked with black in the centre, giving the plumage a streaked appearance; the rump is pure pale lemon yellow, the upper tail-coverts are blackish, margined with whitish olive; the front, and a broad line over and round the eye and bill, are slightly distinguished from the general colour of the head by the want of olivaceous, being grayish white, and as the feathers are very small, appear minutely dotted with black: the curved blackish spot, more apparent in the colours of the male, is slightly indicated on the sides of the head; the sides of the head and neck, the throat, and the breast, are of a grayish white, also streaked with blackish, and somewhat tinged with yellowish on the sides of the breast; the flanks become of a dingy yellowish gray, and have large, dull, blackish blotches; the belly and vent are of a much purer whitish, and the streaks are on that part long, narrow, and well defined; the under tail-coverts are blackish, with broad white margins; the wings are three inches and a half long, reaching, when closed, to the last of the tail-coverts; the first three primaries are subequal and longest, the fourth being but little shorter, and much

longer than the succeeding ; the general colour of the wing is black, the smaller coverts each margined with olive ; the middle and longer coverts broadly tipped with white, forming a double band across the wings, so conspicuous as to afford the most obvious distinguishing character of the species ; all the quills are slightly edged with paler, the tertials being also tipped with white ; the under wing-coverts are of a dark silvery, as well as the whole inferior surface of the wing ; the tail measures two and a half inches, being as usual composed of twelve feathers ; it is black, and deeply emarginated, the feathers acute, and slightly edged with paler : the feet are short, rather robust, and blackish ; the tarsus five-eighths of an inch in length, somewhat sharp behind, with its covering entire before ; the toes are divided to the base, very short, the middle one considerably the longest, but much less than half an inch long, the lateral one subequal, (all these being remarkable characters of the genus ;) the hind toe long, and stoutest ; the nails strong, much curved, and sharp, the hind one the longest, and twice as large as the lateral.

The male described by Latham, Wilson, and Vieillot, as in full plumage, but which, with Temminck, we have good reasons for believing to be between one and two years old, differs from the female in being a trifle larger, and of a crimson red where she is olive gray : the base of the plumage is also considerably darker, approaching to black on the head, which colour predominates in several parts of the plumage, round the eye, on the front, in a broad line curving and widening from the eye each side of the neck, and appearing distinctly on the back, where it generally forms a kind of band descending from the base of the wing : the rump is of a beautiful rose-red ; the black of the wings and tail is deeper ; the white, pure, and more extended ; the lining of the quills, and especially of the tail-feathers, more conspicuous ; the belly is of a pure whitish, much less streaked, &c.

The bird which, from analogy, we take for the adult male, though we have no positive evidence for deciding

whether it is in the passage to, or from, the preceding, differs only in having a light buff orange tinge, where the other has crimson: it agrees with it in all its minute markings, the patch on the sides of the head is better defined, and the wings and tail are of a still deeper black, the edges of the quills and tail-feathers being very conspicuous, and almost pure white. All these facts conspire to favour our opinion. In this state, the bird is rare, as might be expected, and has not before been noticed by any naturalist.

The very young male before assuming the red, at the age of one year, exactly resembles the female; being only more grayish, and less tinged with olive, and having the rump greenish yellow, instead of yellow.

The four above described states of plumage are selected from a number of specimens shot on the same day, and out of the same flock. The changes of these birds must still rank among the unexplained phenomena of natural history. An illustration might be attempted, by supposing a double moult to take place in the birds of this genus, but besides that we ought to be cautious in admitting an hypothesis like this, not founded on observation, it would be entirely untenable in the present instance, from the fact, that all the variations of plumage are found at the same period of the year; thus proving that age, and, of course, sex, but not season, produce these changes; and we must provisionally admit, that, contrary to what takes place in all other birds, these, (the crossbills,) together with the pine bullfinches, lose, instead of acquiring brilliancy of colours, as they advance in age.

This species inhabits, during summer, the remotest regions of North America, and it is therefore extraordinary that it should not have been found in the analogous climates of the old continent. In this, its range is widely extended, as we can trace it from Labrador, westward to Fort de la Fourche, in latitude 56°, the borders of Peace river, and Montague island on the northwest coast, where it was found by Dixon. Round Hudson's Bay it is common and well known,

probably extending far to the northwest, as Mackenzie appears to allude to it when speaking of the only land bird found in the desolate regions he was exploring, which enlivened, with its agreeable notes, the deep and silent forests of those frozen tracts. It is common on the borders of Lake Ontario, and descends in autumn and winter into Canada and the northern and middle States. Its migrations, however, are very irregular. During four years it had escaped my careful researches, and now, while writing, (in the first week of November, 1827,) they are so abundant, that I am able to shoot every day great numbers out of flocks that are continually alighting in a copse of Jersey scrub-pine (*Pinus inops*) even opposite my window. It is proper to mention, that owing perhaps to the inclemency of the season, which has so far been distinguished by rains, early frost, and violent gales of wind, there have been extraordinary flights of winter birds. Many flocks of the purple finch are seen in all directions. The American siskin, (*Fringilla pinus*, Wils.) of which I never saw a living specimen before, covers all the neighbouring pines and its favourite thistles with its innumerable hosts. The snow-bunting (*Emberiza nivalis*) has also made its appearance in New Jersey, though in small parties, after an absence of several years.

The white-winged crossbills generally go to Hudson's Bay on their return from the south, and breed there, none remaining during summer even in the most northern parts of the United States, where they are more properly transient irregular visitors, than even winter residents. They are seldom observed elsewhere than in pine swamps and forests, feeding almost exclusively on the seeds of these trees, together with a few berries. All the specimens I obtained had their crops filled to excess entirely with the small seeds of *Pinus inops*. They kept in flocks of from twenty to fifty, when alarmed suddenly taking wing all at once, and after a little manœuvring in the air, generally alighting again nearly on the same pines whence they

had set out, or adorning the naked branches of some distant, high, and insulated tree. In the countries where they pass the summer, they build their nest on the limb of a pine, towards the centre; it is composed of grasses and earth, and lined internally with feathers. The female lays five eggs, which are white, spotted with yellowish. The young leave their nest in June, and are soon able to join the parents in their autumnal migration.

In the northern countries, where these birds are very numerous, when a deep snow has covered the ground, they appear to lose all sense of danger, and by spreading some favourite food, may be knocked down with sticks, or even caught by the hand, while busily engaged in feeding. Their manners are, in other respects, very similar to those of the common crossbill, as described by Wilson, and they are said also to partake of the fondness for saline substances so remarkable in that species.

GENUS XVII. — COLUMBA

38. *COLUMBA FASCIATA*, SAY. — BAND-TAILED PIGEON.

BONAPARTE, PLATE VIII. FIG. III.

THIS bird, which is a male, was shot in July, by Mr Titian Peale, at a saline spring on a small tributary of the river Platte, within the first range of the Rocky Mountains; it was accompanied by another individual, probably its mate, which escaped. As no other specimens have been discovered, the reader will not be surprised that our specific description is unaccompanied by a general history of their manners.

The band-tailed pigeon is thirteen inches long; the bill is yellow, black at tip, and somewhat gibbous behind the nostrils; the feet are yellow, and the nails black; the irides are blackish; the head is of a purple cinereous colour; the neck, at its junction with the head, has a white semiband, beneath which its back and sides are brilliant golden green, the feathers being brownish

purple at base; the under part of the neck is pale vinaceous purplish, this colour becoming paler as it approaches the vent, which, together with the inferior tail-coverts, is white. The anterior portion of the back, the wing-coverts, and scapulars, are brownish ash; the primaries are dark brown, edged with whitish on the exterior webs; the lower part of the back, the rump, tail-coverts, inferior wing-coverts, and sides, are bluish ash, brighter beneath the wings. The shafts of the body feathers and tail-coverts are remarkably robust, tapering rather suddenly near the tip. The tail, which consists of twelve feathers, is slightly rounded at tip, with a definite blackish band at two-thirds the length from the base, visible on both sides; before this band the colour is bluish ash, and behind dirty grayish: the tail is much lighter on the inferior surface.

This species is closely allied to *Columba caribæa* of Gmelin, with which Say stated its analogy, and also to *Columba leucocephala* of Linné. In fact, it possesses some characters in common with each of these species, such as the band on the tail of the former, and an indication of white on the head of the latter. This character may induce some naturalists to suppose it the young of the *leucocephala*; but by a careful comparison, all doubt will be removed, and it will be admitted to the rank of a distinct species.

The *caribæa* may readily be distinguished from the present species, by its superior size, and by being destitute of the white band on the neck; by having a reddish bill, tipped with yellow, and dark red feet. The *leucocephala*, in the adult state, has the whole head white above; but as it is destitute of this distinction when young, acquiring it gradually as it advances in age, other discriminating characters must be employed; the tail is without a band, the bill is red with a white tip, and the feet are red.

39. *COLUMBA LEUCOCEPHALA*, LIN. — WHITE-CROWNED PIGEON.

BONAPARTE, PLATE XVII. FIG. 1. — EDINBURGH COLLEGE MUSEUM.

THIS bird has been already alluded to in the preceding article, when pointing out the difference between it and the new *Columba fasciata* of Say. We were then far from supposing that we should so soon have to become its historian; but having ascertained that it inhabits Florida, as well as the West Indies, we are enabled to give it a place in these pages.

The white-crowned pigeon, well known as an inhabitant of Mexico and the West Indies, is likewise found in great numbers on some of the Florida keys, such as Key Vacas and others, early in spring, where it feeds almost exclusively on a kind of wild fruit, usually called beach plum, and some few berries of a species of palmetto, that appears to be peculiar to those keys. They are also extensively spread in Jamaica and St Domingo, and are very abundant in the island of Porto Rico, frequenting deep woods, and breeding on rocks, whence they are called by some rock pigeons. They are very numerous on all the Bahama Islands, and form an important article of food with the inhabitants, particularly when young, being then taken in great quantities from the rocks where they breed. On the Florida keys also they breed in large societies, and the young are much sought after by the wreckers. They there feed principally on berries, and especially on those of a tree called sweetwood. When the fruit of this is ripe, they become fat and well flavoured, but other fruits again make their flesh very bitter.

Buffon, in accordance with his whimsical idea of referring foreign species to those of Europe, considers the present as a variety of the biset (*Columba livia*, Briss.) To that bird it is in fact allied, both in form and plumage; and has, moreover, the same habit of breeding in holes and crevices of rocks; but it is, at the same time, entirely distinct.

The size of the white-crowned pigeon has been underrated by authors. Its length is fourteen inches, and its extent twenty-three. The bill is one inch long, carmine red at the base, the end from the nostrils being bluish white; the irides are orange yellow, the bare circle round the eye dusky white, becoming red in the breeding season; the entire crown, including all the feathers advancing far on the bill, is white, with a tinge of cream colour, and is narrowly margined with black, which passes insensibly into the general deep slate colour: on the nape of the neck is a small deep purplish space changing to violet; the remainder of the neck above, and on the sides, is covered by scale-like feathers, bright green with bluish and golden reflections, according as the light falls; the sides of the head, the body above, and whole inferior surface, the wings and tail above and beneath—in short, the whole bird, without any exception but the parts described, is of a uniform deep bluish slate, much lighter on the belly, more tinged with blue on the stout shafted rump feathers, somewhat glossy, and approaching to brownish black on the scapulars: the quills are more of a dusky black; the wings are nearly eight inches long, reaching, when closed, to two-thirds of the tail; the first primary is somewhat shorter than the fourth, and the second and third are longest; the third is curiously scalloped on the outer web, which is much narrowed for two inches from the tip; all are finely edged with whitish; the tail is five inches long, perfectly even, of twelve uniform broad feathers, with rounded tips; the feet are carmine red, the nails dusky; the tarsus measures less than an inch, being subequal to the lateral toes, and much shorter than the middle one. The female is perfectly similar. The young are distinguished by duller tints, and the crown is at first nearly uniform with the rest of their dark plumage: this part, after a time, changes to gray, then grayish white, and becomes whiter and whiter as the bird grows older. It is proper to remark, after what has been said under the article of the band-tailed pigeon, that the white colour extends equally

over the whole crown, not more on one part than another; thus never admitting of a restricted band or line, as in that much lighter coloured bird.

Another species closely allied to, and perhaps identical with, our band-tailed pigeon, (though we have equally good reasons for believing it the *Columba rufina* of Temminck,) and of which we have not yet been able to procure specimens, is also well known to breed on the Florida keys, whither probably almost all the West Indian species occasionally resort.

40. *COLUMBA ZENAIIDA*, BONAPARTE. — ZENAIIDA PIGEON.

BONAPARTE, PLATE XVII. FIG. II.

THE name of dove is not commonly used to designate a systematic group, but is employed for all the small pigeons indiscriminately, whilst the larger doves are known as pigeons. Even this distinction of size, however, does not seem to be agreed upon, as we find authors calling the larger species doves, and the smaller ones pigeons, and sometimes even applying both appellations to different sexes or ages of the same species, as in the case of the common American pigeon, *Columba migratoria*. This extensive family of birds, so remarkable for richness and splendour of colours—so important as contributing largely to supply the wants of mankind—so interesting as forming so perfect a link between the two great divisions of the feathered tribes—has been divided, on more philosophical principles, into three groups, which some naturalists consider as genera, and others as subgenera, or sections. Of these two only are found represented in America; the third, a very natural group, being confined to Africa and the large eastern islands of the old world. That to which the present bird, and all the North American species but one, belong, is the most typical of all, being characterized by a straight and slender bill, both mandibles of which are soft and flexible, and the upper turgid towards the end; by their short tarsi, divided toes, and long, acute

wings, with the first primary somewhat shorter than the second, which is the longest. This group (the true pigeons and doves) is, however, so numerous in species, that we cannot but wonder that it should still remain comparatively untouched by the reforming hand of our contemporaries; especially seeing that as good reasons may be found for subdividing them as the parrots, and other large natural groups. We may indicate the differences exhibited in the form of the scales covering the tarsus, and the shape of the tail, &c. as offering characters on which sections or genera could be founded. But as the species of the United States, which are those we are to treat of, are but few, we shall leave the promising task to any one whose researches may lead him to engage in it; and shall only observe, that the two species described by Wilson belong to a different group from the three we have since introduced into the Fauna of this country. Of these the present beautiful dove is the only one hitherto undescribed.

This new and charming little species inhabits the Florida keys with the preceding, but is much more rare. We have also received it from Cuba, and noticed a specimen in a collection of skins sent from that island by Mr MacLeay to the Zoological Society of London. They are fond of being on the ground, where they are most commonly observed dusting themselves, and seeking for the gravel, which, like the gallinaceous birds, they swallow to assist digestion. When flushed, they produce the same whistling noise with their wings as the common turtle dove, *Columba carolinensis*.

The Zenaida dove measures ten inches in length. The bill is somewhat more robust than that of the common dove, but otherwise perfectly similar, less than an inch long, black, the corners of the mouth being lake; the irides are dark brown, the pupil of the eye large, and the eye itself full, giving the whole bird a mild and pleasing expression; the naked orbits are of a bluish gray. The whole plumage above is yellowish ashy brown, tinged with vinaceous on the crown, and

paler on the sides of the head and neck; under the ears is a small bright rich and deep violaceous spot, rivalling the amethyst in splendour; and above this a similar smaller one, not very distinguishable; the sides of the neck before the bend of the wing exhibit splendid golden violaceous reflections, slightly passing into greenish in different lights; the scapulars are spotted with black, the spots being large and roundish; the exterior wing-coverts, spurious wing, and quill-feathers, are blackish; the primaries are edged with white externally, and, with the exception of the outer ones, at tip also; the secondaries are broadly terminated with white; the chin is yellowish white; the whole inferior surface is bright vinaceous, paler on the throat, and gradually passing into richer on the belly; the flanks and under wing-coverts are delicate lilac, and the under tail-coverts are mixed with the same colour, some of the longest being entirely lilac, which is also found at the base of the plumage on the belly and rump; the wings are six inches and a quarter long, reaching within one inch of the tip of the tail; the primaries are entire on both vanes; the first is longer than the fourth, the second longest, though scarcely longer than the third; the tail is four and a half inches long, composed of twelve broad, full, rounded feathers, extending but one inch beyond their coverts; it is nearly even, and of the colour of the body, with a broad black band at two-thirds of its length, obsolete on the two middle feathers, (which are of the colour of the body,) purer on the three exterior; the lateral feathers are pearl gray for half an inch towards the tip, the outer plume being moreover of that colour on the outer vane; all the tail-feathers are blackish on the inferior surface to within three quarters of an inch of their tips. The feet are red; the nails blackish; the tarsus measures three quarters of an inch in length.

The female is very similar to the male in size and colour; the head, however, is but slightly tinged with vinaceous, the golden violet reflections of the neck are not quite so vivid, and the inferior surface of a paler

vinaceous, but graduated as in the male. The lateral tail-feathers are also much more uniform with the middle one, and of course with the back, the three outer only on each side being pearl gray at tip. This latter character, however, we should rather attribute to age than sex, if we had not good reason to believe that our female is a perfectly adult bird.

At first sight, the Zenaida dove might perhaps be mistaken for the common turtle dove, *Columba carolinensis*, and *marginata* of authors,) having the same general colour and several common markings; but, to mention no other differential character, the short even tail, composed of but twelve feathers, all rounded, the outer bluish gray at tip, will at once distinguish it from the latter, which belongs to a different group, having the tail long cuneiform, and (what is found in no other American species, not even its close relation, the passenger pigeon) composed of fourteen tapering and acute feathers, the two middle remarkably so, and the lateral pure white at tip. If any other distinction should be required, the white tips of the secondaries of our new species will afford a good one, as well as the outer tail-feather, the exterior web of which is blue gray, crossed, as well as the others, by the black band; whilst in the *C. carolinensis* it is entirely pure white, the black band being confined to the inner web.

GENUS XVIII. — MELEAGRIS, LINNÆUS.

41. MELEAGRIS GALLOPAVO, LINNÆUS. — WILD TURKEY.

BONAPARTE, PLATE IX. MALE AND FEMALE.

THE native country of the wild turkey extends from the north-western territory of the United States to the Isthmus of Panama, south of which it is not to be found, notwithstanding the statements of authors, who have mistaken the curassow for it. In Canada, and the now densely peopled parts of the United States, wild turkeys were formerly very abundant; but, like the Indian

and buffalo; they have been compelled to yield to the destructive ingenuity of the white settlers, often wantonly exercised, and seek refuge in the remotest parts of the interior. Although they relinquish their native soil with slow and reluctant steps, yet such is the rapidity with which settlements are extended and condensed over the surface of this country, that we may anticipate a day, at no distant period, when the hunter will seek the wild turkey in vain.

We have neglected no means of obtaining information from various parts of the Union, relative to this interesting bird; and having been assisted by the zeal and politeness of several individuals, who, in different degrees, have contributed to our stock of knowledge on this subject, we return them our best thanks. We have particular satisfaction in acknowledging the kindness of Mr John J. Audubon, from whom we have received a copious narrative, containing a considerable portion of the valuable notes collected by him, on this bird, during twenty years that he has been engaged in studying ornithology, in the only book free from error and contradiction, the great book of nature. His observations, principally made in Kentucky and Louisiana, proved the more interesting, as we had received no information from those states: we have, in consequence, been enabled to enrich the present article with several new details of the manners and habits of the wild turkey.

The wooded parts of Arkansas, Louisiana, Tennessee, and Alabama; the unsettled portions of the states of Ohio, Kentucky, Indiana, and Illinois; the vast expanse of territory northwest of these states, on the Mississippi and Missouri, as far as the forests extend, are more abundantly supplied, than any other parts of the union, with this valuable game, which forms an important part of the subsistence of the hunter and traveller in the wilderness. It is not probable that the range of this bird extends to, or beyond, the Rocky Mountains; the Mandan Indians, who a few years ago visited the city of Washington, considered the turkey one of the greatest

curiosities they had seen, and prepared a skin of one, to carry home for exhibition.

The wild turkey is not very plenty in Florida, Georgia, and the Carolinas; is still less frequently found in the western parts of Virginia and Pennsylvania; and is extremely rare, if indeed it exists at all, in the remaining northern and eastern parts of the United States; in New England, it even appears to have been already destroyed one hundred and fifty years back. I am, however, credibly informed, that wild turkeys are yet to be found in the mountainous districts of Sussex county, New Jersey. The most eastern part of Pennsylvania now inhabited by them, appears to be Lancaster county; and they are often observed in the oak woods near Philipsburg, Clearfield county. Those occasionally brought to the Philadelphia and New York markets, are chiefly obtained in Pennsylvania and New Jersey.

The wild turkeys do not confine themselves to any particular food; they eat maize, all sorts of berries, fruits, grasses, beetles; and even tadpoles, young frogs, and lizards, are occasionally found in their crops; but where the pecan nut is plenty, they prefer that fruit to any other nourishment; their more general predilection is, however, for the acorn, on which they rapidly fatten. When an unusually profuse crop of acorns is produced in a particular section of country, great numbers of turkeys are enticed from their ordinary haunts in the surrounding districts. About the beginning of October, while the mast still remains on the trees, they assemble in flocks, and direct their course to the rich bottom lands. At this season they are observed in great numbers on the Ohio and Mississippi. The time of this irruption is known to the Indians by the name of the *turkey month*.

The males, usually termed *gobblers*, associate in parties, numbering from ten to a hundred, and seek their food apart from the females; whilst the latter either move about singly with their young, then nearly two-thirds grown, or, in company with other females and their families, form troops, sometimes consisting of seventy

or eighty individuals, all of whom are intent on avoiding the old males, who, whenever opportunity offers, attack and destroy the young, by repeated blows on the skull. All parties, however, travel in the same direction, and on foot, unless they are compelled to seek their individual safety by flying from the hunter's dog, or their march is impeded by a large river. When about to cross a river, they select the highest eminences, that their flight may be the more certain; and here they sometimes remain for a day or more, as if for the purpose of consultation, or to be duly prepared for so hazardous a voyage. During this time the males *gobble* obstreperously, and strut with extraordinary importance, as if they would animate their companions, and inspire them with the utmost degree of hardihood; the females and young also assume much of the pompous air of the males, the former spreading their tails, and moving silently around. At length the assembled multitude mount to the tops of the highest trees, whence, at a signal note from a leader, the whole together wing their way towards the opposite shore. All the old and fat ones cross without difficulty, even when the river exceeds a mile in width; but the young, meagre, and weak, frequently fall short of the desired landing, and are forced to swim for their lives; this they do dexterously enough, spreading their tails for a support, closing their wings to the body, stretching the neck forwards, and striking out quickly and forcibly with their legs. If, in thus endeavouring to regain the land, they approach an elevated or inaccessible bank, their exertions are remitted, they resign themselves to the stream for a short time, in order to gain strength, and then, with one violent effort, escape from the water. But in this attempt all are not successful; some of the weaker, as they cannot rise sufficiently high in air to clear the bank, fall again and again into the water, and thus miserably perish. Immediately after the turkeys have succeeded in crossing a river, they for some time ramble about without any apparent unanimity of purpose, and

a great many are destroyed by the hunters, although they are then least valuable.

When the turkeys have arrived in their land of abundance, they disperse in small flocks, composed of individuals of all sexes and ages intermingled, who devour all the mast as they advance: this occurs about the middle of November. It has been observed, that, after these long journeys, the turkeys become so familiar as to venture on the plantations, and even approach so near the farmhouses as to enter the stables and corncribs, in search of food; in this way they pass the autumn, and part of the winter. During this season great numbers are killed by the inhabitants, who preserve them in a frozen state, in order to transport them to a distant market.

Early in March they begin to pair; and, for a short time previous, the females separate from, and shun their mates, though the latter pertinaciously follow them, uttering their gobbling note. The sexes roost apart, but at no great distance, so that, when the female utters a call, every male within hearing responds, rolling note after note, in the most rapid succession; not as when spreading the tail and strutting near the hen, but in a voice resembling that of the tame turkey, when he hears any unusual or frequently repeated noise. Where the turkeys are numerous, the woods from one end to the other, sometimes for hundreds of miles, resound with this remarkable voice of their wooing, uttered responsively from their roosting places. This is continued for about an hour; and, on the rising of the sun, they silently descend from their perches, and the males begin to strut, for the purpose of winning the admiration of their mates.

If the call be given from the ground, the males in the vicinity fly towards the individual, and, whether they perceive her or not, erect and spread their tails, throw the head backwards, distend the comb and wattles, strut pompously, and rustle their wings and body feathers, at the same moment ejecting a puff of air from the lungs. Whilst thus occupied, they occasionally halt to

look out for the female, and then resume their strutting and puffing, moving with as much rapidity as the nature of their gait will admit. During this ceremonious approach, the males often encounter each other, and desperate battles ensue, when the conflict is only terminated by the flight or death of the vanquished.

This pugnacious disposition is not to be regarded as accidental, but as resulting from a wise and excellent law of nature, who always studies the good of the species, without regard to the individuals. Did not females prefer the most perfect of their species, and were not the favours of beauty most willingly dispensed to the victorious, feebleness and degeneracy would soon mark the animal creation; but, in consequence of this general rule, the various races of animals are propagated by those individuals who are not only most to be admired for external appearance, but most to be valued for their intrinsic spirit and energy.

When the object of his pursuit is discovered, if the female be more than one year old, she also struts, and even gobbles, evincing much desire; she turns proudly round the strutting male, and suddenly opening her wings, throws herself towards him, as if to terminate his procrastination, and, laying herself on the earth, receives his dilatory caresses. But should he meet a young hen, his strut becomes different, and his movements are violently rapid; sometimes rising in air, he takes a short circular flight, and on alighting drags his wings for a distance of eight or ten paces, running at full speed, occasionally approaching the timorous hen, and pressing her, until she yields to his solicitations. Thus are they mated for the season, though the male does not confine himself exclusively to one female, nor does he hesitate to bestow his attentions and endearments on several, whenever an opportunity offers.

One or more females, thus associated, follow their favourite, and roost in his immediate neighbourhood, if not on the same tree, until they begin to lay, when they change their mode of life, in order to save their eggs, which the male uniformly breaks if in his power,

that the female may not be withdrawn from the gratification of his desires. At this time the females shun the males during the greater part of the day; the latter become clumsy and careless, meet each other peacefully, and so entirely cease to gobble, that the hens are obliged to court their advances, calling loudly and almost continually for them. The female may then be observed caressing the male, and imitating his peculiar gestures, in order to excite his amorousness.

The cocks, even when on the roost, sometimes strut and gobble, but more generally merely elevate the tail, and utter the *puff*, on which the tail and other feathers suddenly subside. On light or moonshining nights, near the termination of the breeding season, they repeat this action, at intervals of a few minutes, for several hours together, without rising from their perches.

The sexes then separate; the males, being much emaciated, cease entirely to gobble, retire and conceal themselves by prostrate trees, in secluded parts of the forest, or in the almost impenetrable privacy of a cane-brake. Rather than leave their hiding places, they suffer themselves to be approached within a short distance, when they seek safety in their speed of foot; at this season, however, they are of no value to the hunter, being meagre and covered with ticks. By thus retiring, using very little exercise, and feeding on peculiar grasses, they recover their flesh and strength, and when this object is attained, again congregate, and recommence their rambles.

About the middle of April, when the weather is dry, the female selects a proper place in which to deposit her eggs, secured from the encroachment of water, and, as far as possible, concealed from the watchful eye of the crow: this crafty bird espies the hen going to her nest, and having discovered the precious deposit, waits for the absence of the parent, and removes every one of the eggs from the spot, that he may devour them at leisure. The nest is placed on the ground, either on a dry ridge, in the fallen top of a dead leafy tree, under a thicket of sumach or briars, or by the side of a log:

it is of a very simple structure, being composed of a few dried leaves. In this receptacle the eggs are deposited, sometimes to the number of twenty, but more usually from nine to fifteen; they are whitish, spotted with reddish brown, like those of the domestic bird. Their manner of building, number of eggs, period of incubation, &c. appear to correspond throughout the Union, as I have received exactly similar accounts from the northern limits of the turkey range, to the most southern regions of Florida, Louisiana, and the western wilds of Missouri.

The female always approaches her nest with great caution, varying her course so as rarely to reach it twice by the same route; and, on leaving her charge, she is very careful to cover the whole with dry leaves, with which she conceals it so artfully, as to make it extremely difficult, even for one who has watched her movements, to indicate the exact spot: hence few nests are found, and these are generally discovered by fortuitously starting the female from them, or by the appearance of broken shells, scattered around by some cunning lynx, fox, or crow. When laying or sitting, the turkey hen is not readily driven from her post by the approach of apparent danger; but, if an enemy appears, she crouches as low as possible, and suffers it to pass. A circumstance related by Mr Audubon will shew how much intelligence they display on such occasions: having discovered a sitting hen, he remarked that, by assuming a careless air, whistling, or talking to himself, he was permitted to pass within five or six feet of her; but, if he advanced cautiously, she would not suffer him to come within twenty paces, but ran off twenty or thirty yards with her tail expanded, when, assuming a stately gait, she paused on every step, occasionally uttering a chuck. They seldom abandon their nests on account of being discovered by man, but should a snake, or any other animal, suck one of the eggs, the parent leaves them altogether. If the eggs be removed, she again seeks the male and recommences laying, though otherwise she lays but one nest of eggs

during the season. Several turkey hens sometimes associate, perhaps for mutual safety, deposit their eggs in the same nest, and rear their broods together. Mr Audubon once found three females sitting on forty-two eggs. In such cases, the nest is constantly guarded by one of the parties, so that no crow, raven, nor even polecat, dares approach it.

The mother will not forsake her eggs, when near hatching, while life remains; she will suffer an enclosure to be made around and imprison her, rather than abandon her charge. Mr Audubon witnessed the hatching of a brood, while thus endeavouring to secure the young and mother. "I have laid flat," says he, "within a very few feet, and seen her gently rise from the eggs, look anxiously towards them, chuck with a sound peculiar to the mother on such an occasion, remove carefully each half empty shell, and with her bill caress and dry the younglings, that already stand tottering and attempting to force their way out of the nest."

When the process of incubation is ended, and the mother is about to retire from the nest with her young brood, she shakes herself violently, picks and adjusts the feathers about the belly, and assumes a different aspect; her eyes are alternately inclined obliquely upwards and sidewise; she stretches forth her neck, in every direction, to discover birds of prey or other enemies; her wings are partially spread, and she softly clucks to keep her tender offspring close to her side. They proceed slowly, and, as the hatching generally occurs in the afternoon, they sometimes return to pass the first night in the nest. While very young, the mother leads them to elevated dry places, as if aware that humidity, during the first few days of their life, would be very dangerous to them, they having then no other protection than a delicate, soft, hairy down. In very rainy seasons wild turkeys are scarce, because, when completely wetted, the young rarely survive.

At the expiration of about two weeks, the young leave the ground on which they had previously reposed

at night under the female, and follow her to some low, large branch of a tree, where they nestle under the broadly curved wings of their vigilant and fostering parent. The time then approaches in which they seek the open ground or prairie land during the day, in search of strawberries, and subsequently of dewberries, blackberries, and grasshoppers; thus securing a plentiful food, and enjoying the influence of the genial sun. They frequently dust themselves in shallow cavities of the soil, or on anthills, in order to clean off the loose skin of their growing feathers, and rid themselves of ticks and other vermin.

The young turkeys now grow rapidly, and in the month of August, when several broods flock together, and are led by their mothers to the forest, they are stout and quite able to secure themselves from the unexpected attacks of wolves, foxes, lynxes, and even cougars, by rising quickly from the ground, aided by their strong legs, and reaching with ease the upper limbs of the tallest tree. Amongst the numerous enemies of the wild turkey, the most dreaded are the large diurnal and nocturnal birds of prey, and the lynx (*Felis rufa*), who sucks their eggs, and is extremely expert at seizing both parent and young; he follows them for some distance, in order to ascertain their course, and then, making a rapid circular movement, places himself in ambush before them, and waits until, by a single bound, he can fasten on his victim.

The following circumstance is related by Bartram : " Having seen a flock of turkeys at some distance, I approached them with great caution; when, singling out a large cock, and being just on the point of firing, I observed that several young cocks were affrighted, and in their language warned the rest to be on their guard against an enemy, whom I plainly perceived was industriously making his subtle approaches towards them, behind the fallen trunk of a tree, about twenty yards from me. This cunning fellow-hunter was a large fat wild cat, or lynx: he saw me, and at times seemed to watch my motions, as if determined to seize the

delicious prey before me ; upon which I changed my object, and levelled my piece at him. At that instant my companion, at a distance, also discharged his piece, the report of which alarmed the flock of turkeys, and my fellow-hunter, the cat, sprang over the log, and trotted off."

These birds are guardians of each other, and the first who sees a hawk or eagle gives a note of alarm, on which all within hearing lie close to the ground. As they usually roost in flocks, perched on the naked branches of trees, they are easily discovered by the large owls, and, when attacked by these prowling birds, often escape by a somewhat remarkable manœuvre. The owl sails around the spot to select his prey ; but, notwithstanding the almost inaudible action of his pinions, the quick ear of one of the slumberers perceives the danger, which is immediately announced to the whole party by a *chuck* ; thus alarmed, they rise on their legs, and watch the motions of the owl, who, darting like an arrow, would inevitably secure the individual at which he aimed, did not the latter suddenly drop his head, squat, and spread his tail over his back ; the owl then glances over without inflicting any injury, at the very instant that the turkey suffers himself to fall headlong towards the earth, where he is secure from his dreaded enemy.

On hearing the slightest noise, wild turkeys conceal themselves in the grass, or among shrubs, and thus frequently escape the hunter, or the sharp-sighted birds of prey. The sportsman is unable to find them during the day, unless he has a dog trained for the purpose ; it is necessary to shoot them at a very short distance, since, when only wounded, they quickly disappear, and, accelerating their motion by a sort of half flight, run with so much speed, that the swiftest hunter cannot overtake them. The traveller, driving rapidly down the declivity of one of the Alleghanies, may sometimes see several of them before him, that evince no urgent desire to get out of the road ; but, on alighting, in

hopes of shooting them, he soon finds that all pursuit is vain.

In the spring, when the males are much emaciated by their attendance on the females, it sometimes may happen that, in cleared countries, they can be overtaken by a swift cur-dog, when they will squat, and suffer themselves to be caught by the dog, or hunter, who follows on horseback. But from the knowledge we have gained of this bird, we do not hesitate to affirm, that the manner of running down turkeys, like hares or foxes, so much talked of, is a mere fable, as such a sport would be attended with very trifling success. A turkey hound will sometimes lead his master several miles, before he can a second time *flush* the same individual from his concealment; and even on a fleet horse, after following one for hours, it is often found impossible to *put it up*. During a fall of melting snow, turkeys will travel extraordinary distances, and are often pursued in vain by any description of hunters; they have then a long, straddling manner of running, very easy to themselves, but which few animals can equal. This disposition for running, during rains, or humid weather, is common to all gallinaceous birds.

The males are frequently decoyed within gunshot, in the breeding season, by forcibly drawing the air through one of the wing bones of the turkey, producing a sound very similar to the voice of the female; but the performer on this simple instrument must commit no error, for turkeys are quick of hearing, and, when frequently alarmed, are wary and cunning. Some of these will answer to the call without advancing a step, and thus defeat the speculations of the hunter, who must avoid making any movement, inasmuch as a single glance of a turkey may defeat his hopes of decoying them. By imitating the cry of the barred owl, (*Strix nebulosa*,) the hunter discovers many on their roosts, as they will reply by a gobble to every repetition of this sound, and can thus be approached with certainty, about daylight, and easily killed.

Wild turkeys are very tenacious of their feeding

grounds, as well as of the trees on which they have once roosted. Flocks have been known to resort to one spot for a succession of years, and to return after a distant emigration in search of food. Their roosting place is mostly on a point of land, jutting into a river, where there are large trees. When they have collected at the signal of a repeated gobbling, they silently proceed towards their nocturnal abodes, and perch near each other: from the numbers sometimes congregated in one place, it would seem to be the common rendezvous of the whole neighbourhood. But no position, however secluded or difficult of access, can secure them from the attacks of the artful and vigilant hunter, who, when they are all quietly perched for the night, takes a stand previously chosen by daylight, and, when the rising moon enables him to take sure aim, shoots them down at leisure, and, by carefully singling out those on the lower branches first, he may secure nearly the whole flock, neither the presence of the hunter, nor the report of his gun, intimidating the turkeys, although the appearance of a single owl would be sufficient to alarm the whole troop: the dropping of their companions from their sides excites nothing but a buzzing noise, which seems more expressive of surprise than fright. This fancied security, or heedlessness of danger, while at roost, is characteristic of all the gallinaceous birds of North America.

The more common mode of taking turkeys is by means of *pens*, constructed with logs, covered in at top, and with a passage in the earth under one side of it, just large enough to admit an individual when stooping. The ground chosen for this purpose is generally sloping, and the passage is cut on the lower side, widening outwards. These preparations being completed, Indian corn is strewed for some distance around the pen, to entice the flock, which, picking up the grain, is gradually led towards the passage, and thence into the enclosure, where a sufficient quantity of corn is spread to occupy the leader until the greater part of the turkeys have entered. When they raise their heads and discover

that they are prisoners, all their exertions to escape are directed upwards and against the sides of the pen, not having sagacity enough to stoop sufficiently low to pass out by the way they entered, and thus they become an easy prey, not only to the experienced hunter, but even to the boys on the frontier settlements.

In proportion to the abundance or scarcity of food, and its good or bad quality, they are small or large, meagre or fat, and of an excellent or indifferent flavour : in general, however, their flesh is more delicate, more succulent, and better tasted than that of the tame turkey : they are in the best order late in the autumn, or in the beginning of winter. The Indians value this food so highly, when roasted, that they call it " the white man's dish," and present it to strangers as the best they can offer. It seems probable that in Mexico the wild turkey cannot obtain such substantial food as in the United States, since Hernandez informs us that their flesh is harder, and in all respects inferior to that of the domestic bird.

The Indians make much use of their tails as fans ; the women weave their feathers with much art on a loose web made of the rind of the birch tree, arranging them so as to keep the down on the inside, and exhibit the brilliant surface to the eye. A specimen of this cloth is in the Philadelphia Museum ; it was found enveloping the body of an Indian female, in the great Saltpetre cave of Kentucky.

Among the benefits conferred by America on the rest of the world, the gift of this noble bird should occupy a distinguished place, as unquestionably one of the most useful of the feathered tribe, being capable of ministering largely to the sustenance and comfort of the human race. Though the turkey is surpassed in external beauty by the magnificent peacock, its flesh is greatly superior in excellence, standing almost unrivalled for delicacy of texture and agreeable sapidity. On this account it has been eagerly sought by almost all nations, and has been naturalized with astonishing rapidity

throughout the world, almost universally constituting a favourite banquet dish.

The turkey, belonging originally to the American continent, was necessarily unknown to the ancients, who, in this as in a thousand other instances, were deficient in our most common and essential articles of food. Readers unacquainted with the fact may well be surprised to learn, that, although the introduction of this bird into Europe is comparatively modern, its origin has already been lost sight of, and that eminent naturalists of the last century, who lived so much nearer to the time of its first appearance, have expressed great uncertainty concerning its native country. Thus Belon, Aldrovandi, Gessner, Ray, &c. thought that it came originally from Africa and the East Indies, and endeavoured to recognize it in some of the domestic birds of the ancients. Belon and Aldrovandi supposed it to have been mentioned by ancient authors, but they mistook for it the *Numida meleagris* of Linné, which is actually an African bird, now almost naturalized in America, even in a wild state, so that it would be apparently more reasonable for America to regard that bird as indigenous, than that the old continent should lay claim to the turkey. In so soon losing sight of the origin of this bird, we see a strong exemplification of the ungrateful disposition of man, who can durably treasure up the memory of wrongs and injuries, but fails to recollect the greatest benefits he has received. It would be loss of time to combat the arguments advanced by authors, who have deceived themselves in attempting to deprive America of her just title to this bird, since they have been fully refuted by the eloquent Buffon; but we may here introduce a sketch of its progress from America throughout Europe.

The first unquestionable description of the turkey was written by Oviedo, in 1525, in the summary of his *History of the Indies*. This bird was sent from Mexico to Spain early in the sixteenth century; from Spain it was introduced into England in 1524. Turkeys were taken to France in the reign of Francis the First,

whence they spread into Germany, Italy, &c. ; a few, however, had been carried to the latter country by the Spaniards, some years previously. The first turkey eaten in France appears to have been served up at the wedding banquet of Charles the Ninth, in the year 1570. Since that period they have been bred with so much care, that, in England, as we read in ancient chronicles, their rapid increase rendered them attainable at country feasts, where they were a much esteemed dish as early as 1585. Europeans conveyed them to all their colonies, and thus were they gradually introduced into Asia, Africa, and even Oceanica.

The French distinguished them by the name of *Cog et Poule d'Inde*, (cock and hen from India,) because they were natives of the West Indies. Subsequently, for the sake of brevity, they called them *Dindon*, an appellation which is yet retained. The English name is still worse, as it conveys the false idea that the turkey originated in Asia, owing to the ridiculous habit, formerly prevalent, of calling every foreign object by the name of Turk, Indian, &c.

Although the turkey is generally considered a stupid bird, it is probable that his intellectual qualifications have not been fairly appreciated, as he is susceptible of very lively emotions. If any new and remarkable object attracts the attention of the male, his whole appearance and demeanour undergo a sudden and extraordinary change : relinquishing his peaceful aspect, he boldly raises himself, his head and neck become turgid, and the wattles, from an influx of blood, glow with vivid red ; he bristles up the feathers of the neck and back, his tail is vertically raised and expanded like a fan, and the wing-feathers are extended until they touch the ground. Thus transformed, he utters a low, humming sound, and advances with a grave and haughty strut, occasionally accelerating his steps, and, at the same time, rubbing the tips of the primary feathers violently against the earth. During these manœuvres, he now and then utters a harsh, interrupted, and dissonant note, apparently expressive of the highest degree

of rage: this cry, sounding like *rook, oorook, oorook*; will be repeated at the pleasure of any person who should whistle, or strike the ear of the bird by any other acute or unusual sound. The appearance of any red cloth is sure to awaken his anger, and induce him to rush fearlessly on the disagreeable object, exerting all his power to injure or destroy it.

In connection with the peculiar character of this bird, we may advantageously quote the sentiments of the great Franklin, who expressed a regret that the turkey should not have been preferred to the bald eagle as an emblem of the United States. Certainly this eagle is a tyrannical and pusillanimous bird, by no means an appropriate representative of a great and magnanimous nation, as was the eagle chosen by the Romans.

"Others object to the bald eagle," says Franklin, in one of his letters, "as looking too much like a dindon, or turkey. For my own part, I wish the bald eagle had not been chosen as the representative of our country; he is a bird of bad moral character; he does not get his living honestly; you may have seen him perched on some dead tree, where, too lazy to fish for himself, he watches the labour of the fishing hawk, and, when that diligent bird has at length taken a fish, and is bearing it to his nest for the support of his mate and young ones, the bald eagle pursues him, and takes it from him. With all this injustice he is never in good case, but, like those among men who live by sharpening and robbing, he is generally poor, and often very lousy. Besides, he is a rank coward; the little kingbird, not bigger than a sparrow, attacks him boldly, and drives him out of the district. He is, therefore, by no means a proper emblem for the brave and honest Cincinnati of America, who have driven all the *Kingbirds* from our country, though exactly fit for that order of knights which the French call *Chevaliers d'Industrie*. I am, on this account, not displeased that the figure is not known as a bald eagle, but looks more like a turkey. For in truth the turkey is, in comparison, a much more respectable bird, and withal a true original native of America. Eagles have

been found in all countries, but the turkey was peculiar to ours. He is, besides, (though a little vain and silly, 'tis true, but not the worse emblem for that,) a bird of courage, and would not hesitate to attack a grenadier of the British guards, who should presume to invade his farm-yard with a red coat on."

But, since the choleric temper and vanity of the tame turkey are proverbial in various languages, in some of which its very name is opprobrious, and often applied in derision to vainglorious and stupid people, we are better satisfied that its effigy was not placed in the escutcheon of the United States.

Those who have not observed the turkey in its wild state, have only seen its deteriorated progeny, which are greatly inferior in size and beauty. So far from having gained by the care of man, and the abundance of food accessible in its state of domestication, this bird has degenerated not only in Europe and Asia, but, what is certainly extraordinary, even in its native country. The domesticated turkey of America, accustomed as it is to roam in the woods and open fields almost without restraint, is in no respect superior to that of the European poultry yard. I have, however, seen several very beautiful ones from Lancaster county, Pennsylvania, and Sussex county, New Jersey, that were said to be a cross breed between the wild cock and tame hen. This crossing often occurs in countries where wild and tame turkeys are found; it is well known that they will readily approach each other; and such is the influence of slavery even upon the turkey, that the robust inhabitant of the forest will drive his degenerate kinsfolk from their own food, and from their females, being generally welcomed by the latter and by their owners, who well know the advantages of such a connection. The produce of this commixture is much esteemed by epicures, uniting the luscious obesity of the one, with the wild flavour of the other. A gentleman, residing in Westchester county, New York, a few years since procured a young female wild turkey, in order to make the experiment of crossing the breed;

but, owing to some circumstance, it did not succeed, and in the ensuing spring this female disappeared. In the following autumn she returned, followed by a large brood; these were quite shy, but, by a little management, they were secured in a coop, and the mother allowed her liberty: she remained on the farm until the succeeding spring, when she again disappeared, and returned in autumn with another brood. This course she has repeated for several successive years.

Eggs of the wild turkey have been frequently taken from their nests and hatched under the tame hen; the young preserve a portion of their uncivilized nature, and exhibit some knowledge of the difference between themselves and their foster mother, roosting apart from the tame ones, and in other respects shewing the force of hereditary disposition. The domesticated young, reared from the eggs of the wild turkey, are often employed as decoy birds to those in a state of nature. Mr William Bloom, of Clearfield, Pennsylvania, caught five or six wild turkeys, when quite chickens, and succeeded in rearing them. Although sufficiently tame to feed with his tame turkeys, and generally associate with them, yet they always retained some of their original propensities, roosting by themselves, and higher than the tame birds, generally on the top of some tree, or of the house. They were also more readily alarmed; on the approach of a dog, they would fly off, and seek safety in the nearest woods. On an occasion of this kind, one of them flew across the Susquehanna, and the owner was apprehensive of losing it; in order to recover it, he sent a boy with a tame turkey, which was released at the place where the fugitive had alighted. This plan was successful; they soon joined company, and the tame bird induced his companion to return home. Mr Bloom remarked, that the wild turkey will thrive more, and keep in better condition, than the tame, on the same quantity of food.

Besides the above mentioned half breed, some domesticated turkeys, of a very superior metallic tint, are sold in the Philadelphia and New York markets as

wild ones. Many of these require a practised eye to distinguish their true character, but they are always rather less brilliant, and those I examined had a broad whitish band at the tip of the tail-coverts, and another at the tip of the tail itself, which instantly betrayed their origin, the wild ones being entirely destitute of the former, and the band on the tip of the tail being neither so wide nor so pure.

In the following description we give the generic as well as the specific characters of the wild turkey, in order to make it complete.

The male wild turkey, when full grown, is nearly four feet in length, and more than five in extent. The bill is short and robust, measuring two inches and a half to the corner of the mouth; it is reddish, and horn colour at tip; the superior mandible is vaulted, declining at tip, and overhangs the inferior, being longer and wider; it is covered at base by a naked cere-like membrane, in which the nostrils are situated, they being half closed by a turgid membrane, and opening downwards; the inferior mandible slightly ascends towards the tip; the aperture of the ear is defended by a fascicle of small decomposed feathers; the tongue is fleshy and entire; the irides are dark brown; the head, which is very small in proportion to the body, and half of the neck, are covered by a naked bluish skin, on which are a number of red wart-like elevations on the superior portion, and whitish ones on the inferior, interspersed with a few scattered, black, bristly hairs, and small feathers, which are still less numerous on the neck; the naked skin extends farther downwards on the inferior surface of the neck, where it is flaccid and membranous, forming an undulating appendage, on the lower part of which are cavernous elevations, or *wattles*. A wrinkled, fleshy, conic, extensible caruncle, hairy and penicellated at tip, arises from the bill at its junction with the forehead; when the bird is quiescent, this process is not much more than an inch and a half long; but when he is excited by love or rage, it becomes elongated, so as to cover

the bill entirely, and depend two or three inches below it. The neck is of a moderate length and thickness, bearing on its inferior portion a pendent fascicle of black rigid hairs, about nine inches long. The body is thick, somewhat elongated, and covered with long truncated feathers; these are divided into very light fuliginous down at base, beyond which they are dusky; to this dusky portion succeeds a broad, effulgent, metallic band, changing now to copper colour or bronze gold, then to violet or purple, according to the incidence of light; and at tip is a terminal, narrow, velvet black band, which does not exist in the feathers of the neck and breast; the lower portion of the back, and the upper part of the rump, are much darker, with less brilliant golden violaceous reflections; the feathers of the inferior part of the rump have several concealed, narrow, ferruginous, transverse lines, then a black band before the broad metallic space, which is effulgent coppery; beyond the terminal narrow black band is an unpolished bright bay fringe. The upper tail-coverts are of a bright bay colour, with numerous narrow bars of shining greenish; all these coverts are destitute of the metallic band, and the greater number have not the black subterminal one; the vent and thighs are plain brownish cinereous, intermixed with paler; the under tail-coverts are blackish, glossed with coppery towards the tip, and at tip are bright bay.

The wings are concave and rounded, hardly surpassing the origin of the tail; they have twenty-eight quill feathers, of which the first is shortest, and the fourth and fifth longest, the second and ninth being nearly equal; the smaller and middling wing-coverts are coloured like the feathers of the body; the greater coverts are copper violaceous, having a black band near the whitish tip; their concealed web is blackish, sprinkled with dull ferruginous: in old birds, the exterior web is much worn by friction amongst the bushes, in consequence of which those feathers exhibit a very singular, unwebbed, curved appearance. The spurious wing, the primary coverts, and the primaries,

are plain blackish, banded with white, which is interrupted by the shaft, and sprinkled with blackish; the secondaries have the white portion so large, that they may as well be described as white, banded with blackish, and are, moreover, tinged with ferruginous yellow; this colour gradually encroaches on the white, and then on the blackish, in proportion as the feathers approach the body, so that the tertials are almost entirely of that colour, being only sprinkled with blackish, and having metallic reflections on the inner web; the anterior under wing-coverts are brownish black, the posterior ones being gray; the tail measures more than a foot and a quarter, is rounded, and composed of eighteen wide feathers; it is capable of being expanded and elevated, together with the superior tail-coverts, so as to resemble a fan, when the bird parades, struts, or wheels. The tail is ferruginous, mottled with black, and crossed by numerous narrow undulated lines, of the same colour, which become confused on the middle feathers; near the tip is a broad black band, then the feathers are again mottled for a short distance, and are widely tipped with ferruginous yellow.

The feet are robust and somewhat elongated; the tarsus measures more than six inches in length, being covered before by large alternate pentagonal plates, and furnished, on the inner posterior side, with a rather obtuse, robust, compressed spur, nearly one inch long. The toes are three before, connected at base by a membrane, and one behind, touching the ground only at tip, being articulated higher on the tarsus than the others, and one-half shorter than the lateral toes, which are equal; the middle toe is more than four inches long, and the posterior but little more than one inch; they are all covered by entire plates; the sole is granulated: the colour of the feet is red, the margins of the plates and scales, the membrane and nails, being blackish; the nails are oblong, wide, obtuse at tip, rounded above, and perfectly plain beneath.

The female, or hen turkey, is considerably smaller in

size, being three feet and a quarter long; the bill and feet resemble those of the male, but are proportionally smaller, the latter being destitute of even a rudiment of spur; the irides are like those of the male; the head and neck are not so naked as in that sex, but are covered by small, decomposed feathers, of a dirty grayish colour; those of the back of the neck are tipped with ferruginous, constituting a longitudinal vitta on that part; the caruncle on the frontlet is rudimental, not susceptible of being elongated; the pectoral appendage is entirely wanting in our specimen; the general plumage is dusky gray, each feather having a metallic band, less brilliant than that of the male; then a blackish band and a grayish terminal fringe; the black subterminal band is obsolete on the feathers of the neck, and of the whole inferior surface; those of the latter part, with the feathers of the lower portion of the back, of the rump, and the flanks, have their tips yellowish ferruginous, becoming gradually brighter towards the tail. The vent and thighs are dirty yellowish gray, without any reflections; the under tail-coverts are tipped, and varied with rather deep ferruginous; the superior tail-coverts are like those of the male, but duller, and tipped with a broad, whitish ferruginous fringe. The wings are also duller, each covert being tipped with grayish; less white exists on the primaries, the bands being narrower, and the secondaries entirely destitute of them. The tail is similar in colour to that of the male. It is proper to remark, that the female which furnished the above description, though certainly adult, had not attained to its full size and perfect beauty. It was procured in the month of March, on St John's River, Florida. The male was selected from among many fine specimens, shot in the month of April, near Engineer Cantonment, on the Missouri. It weighed twenty-two pounds; but as the males are very thin at that season,* when in good order it must have weighed much more.

* The extraordinary leanness of this bird, at particular seasons

The young of both sexes resemble each other so closely, before the naked membrane acquires its tinge of red, as to be scarcely distinguishable; the females, however, when a few days old, are somewhat larger than the males, and have a weaker piping note; the males then begin to stand higher on their legs, which are stronger than those of the females, and soon exhibit the rudiments of spurs. On the approach of the first winter, the young males shew a rudiment of the beard or fascicle of hairs on the breast, consisting of a mere tubercle, and attempt to strut and gobble; the second year the hairy tuft is about three inches long; in the third the turkey attains its full stature, although it certainly increases in size and beauty for several years longer. In a fine male specimen, evidently young, which I obtained in the Philadelphia market, the plumage is equally brilliant with that of the finest adult, although the frontal caruncle is only one inch in length, the pectoral appendage two inches, and the spur merely rudimental. The concealed portion of the plumage on the anterior part of the back is sprinkled with pale ferruginous, which disappears as the bird advances in age.

Females of four years old have their full size and colouring; they then possess the pectoral fascicle, four or five inches long, (which, according to Mr Audubon, they exhibit a little in the second year, if not barren,) but this fascicle is much thinner than that of the male. The barren hens do not obtain this distinction until a very advanced age; and, being preferable for the table, the hunters single them from the flock, and kill them in preference to the others. The female wild turkey is more frequently furnished with the hairy tuft than the tame one, and this appendage is gained earlier in life. The great number of young hens without it, has no doubt given rise to the incorrect assertion of a few writers, that the female is always destitute of it.

of the year, has become proverbial in many Indian languages. An *Omahaw*, who wishes to make known his abject poverty, says, "*Wah pawne zezecah ha go ba*,—I am as poor as a turkey in summer."

The weight of the hen generally averages about nine pounds avoirdupois. Mr Audubon has shot barren hens, in strawberry time, weighing thirteen pounds; and he has seen some few so fat as to burst open by falling from a tree, after being shot. The male turkeys differ more in bulk and weight; from the accounts I have received from various parts of the Union, fifteen or twenty pounds may be considered a fair statement of their medium weight; but birds of thirty pounds are not very rare; and I have ascertained the existence of some weighing forty. In relation to those surpassing the last mentioned weight, according to the report of authors who do not speak from personal observation, I have not been able to find any, and am inclined to consider them as fabulous. Mr Audubon informs us, he saw one in the Louisville market that weighed thirty-six pounds; the pectoral appendage of this bird measured more than a foot in length. Bartram describes a specimen of remarkable size and beauty, reared from an egg found in the forest, and hatched by a common hen. When this turkey stood erect, the head was three feet from the ground. The animal was stately and handsome, and did not seem insensible of the admiration he excited.

Though comparatively recent, the domestic state of the turkey has been productive of many varieties; we need not, therefore, be surprised at the existence of numerous and remarkable differences in those animals, which have been domesticated from time immemorial. The most striking aberration from the standard of the species, is certainly the tufted turkey, which is very rare, the crest being white in some specimens, and black in others. Tame turkeys sometimes occur of an immaculate black colour; others are exclusively white; some are speckled or variegated; and all these varieties are continued by propagation, under analogous circumstances. In the wild state, a white, or even a speckled turkey, is unknown; and we may venture to say, that a plain black one has hardly ever occurred.

Moehring proposed the name of *Cynchramus* for this

genus, as the term *Meleagris* was used by the ancients to indicate a different bird. All other naturalists have agreed with Linné, who, though fully aware of the fact, made use of the name we have adopted. But he included in the genus two allied species, which Gmelin very properly rejected, and placed in a separate genus, which he called *Penelope*, considering the turkey as *sui generis*. Latham again rendered the genus unnatural, by restoring one of the objectionable Linnean species, perceiving that it was not properly placed in *Penelope*; it is, in truth, a *Phasianus*. As now characterized, the present genus is exclusively American; and, by the discovery of a beautiful species closely allied to that of the United States, it now consists of two species. The ocellated turkey (*Meleagris oculata*) inhabits Honduras, and may be distinguished from the common species by its smaller size, more brilliant plumage, and principally by having ocellated spots on the tail. It was first described by Cuvier, and has lately been figured in the magnificent periodical work, the "*Planches Coloriées*" of Temminck and Laugier. A beautiful specimen has long been exhibited in the Charleston Museum.

M. Duponceau, so well known by his philological researches, has favoured us with the following table of names for the wild turkey, in the different Indian languages.

E. English Pronunciation. — F French. — S. Spanish. — G. German.

Algonkin	.	.	Mississay, E.	.	Mackenzie.
Adayes	.	.	Owachuk, S.	.	MS. Voc.
Atacapas	.	.	Skilling, S.	.	MS. Voc.
Caddoes	.	.	Noe, E.	.	Dr Sibley.
Chetimachas	.	.	Tsante hatineche	}	MS. Voc.
			hase, S		
Cherokee	.	.	Kainna, Oocoocoo, E.	.	MS. Voc.
Chickasaws	.	.	Fukit, E.	.	MS. Voc.
Choctaws	.	.	Oopuh, E.	.	MS. Voc.
Creeks	.	.	Pinewau, E.	.	MS. Voc.
Delaware proper			Tschikenum, G.	.	{ Heckewelder and Zeisberger.
Delaware of New Jersey	{		Tshikuuna, E.	.	
Delaware of New Sweden			Sickenem, (Swedish)	.	Luther's Catechism.
Huron	.	.	Ondetontak, F.	.	Pere Sagard.

Wyandot (same people)	Daigh-ton-tah, E.	{ Attwater in Archæol.
Illinois . . .	Pireouah, F.	{ Amer
Knisteneaux . . .	Mes-sey-thew, E.	{ MS. Voc.
Miamis . . .	Pilauch . . .	{ Mackenzie.
Nenticoke . . .	Pahquun, E.	{ MS. Voc.
Nottoway *	Kunum, E.	{ MS. Voc.
Omahaw (a branch of Sioux)	Zo-ze-kah, E.	{ Say.
Onondagos (Iroquois)	Netachrochwa gatschi-nak, G.	{ Zeisberger's Dictionary, MS
Osage { cock . . .	Sukah tingah, E.	{ MS Voc.
{ hen . . .	Inchuga Sukah, E.	{ MS Voc.
Ottos, or Wahtoktatah (Sioux)	Wa-ek-kung-ja, E.	{ Say.
Shawanese . . .	Pelewa, G.	{ Heckewelder.
Uchee † . . .	Witch-pshah, E.	{ MS. Voc.
Unquachog (Long Island)	Nahiam, E.	{ MS. Voc.

GENUS XIX. — *TETRAO*42. *TETRAO OBSCURUS*, SAY. — DUSKY GROUSE.

BONAPARTE, PLATE XVIII. FEMALE.

LINNE, in his genus *Tetrao*, brought together so great a number of species bearing no more than a distant resemblance to each other, and differing not only in their external characters, but even in their peculiar habits, that he might, with almost the same propriety, have included in it all typical gallinaceous birds. Latham very judiciously separated the genus *Tinamus*, as well as that of *Perdix*, which latter he restored from Brisson. Illiger likewise contributed to our better knowledge of these birds by characterizing two more natural genera, *Syrnhaptēs* and *Ortygis*. Temminck, in his *Histoire des Gallinacés*, carried the number to seven, but has since reduced it by reuniting *Coturnix* to *Perdix*.

The true *Tetraones* are divided by Vieillot into two genera, the *Lagopodes* forming a distinct one by themselves. These, however, we regard as no more than a subgenus, of which we distinguish three in our

* Indians of Virginia, a branch of the Tuscaroras

† *Uchees*, a nation of Floridian Indians, speaking a curious language, full of particular sounds, not found in any other languages. They live among the Creeks.

genus *Tetrao*. I.—*Lagopus*, which represents it in the Arctic Polar regions; for whose climate they are admirably adapted by being clothed to the very nails in plumage suited to the temperature, furnished abundantly with thick down, upon which the feathers are closely applied. The colour of their winter plumage is an additional protection against rapacious animals, by rendering it difficult to distinguish them from the snows by which they are surrounded. II.—*Tetrao*, which is distributed over the more temperate climates; the legs being still feathered down to the toes. III.—*Bonasia*, a new division, of which we propose *Tetrao bonasia*, L. as the type, in which only the upper portion of the tarsus is feathered. These occasionally descend still farther south than the others, inhabiting wooded plains as well as mountainous regions, to which those of the second section are more particularly attached. But the entire genus is exclusively boreal, being only found in Europe, and the northern countries of America and Asia. The long and sharp-winged grouse, or *Pterocles* of Temminck, which represent, or rather replace these birds in the arid and sandy countries of Africa and Asia, a single species inhabiting also the southern extremity of Europe, we consider, in common with all modern authors, as a totally distinct genus. That group, composed of but few species, resort to the most desert regions, preferring dry and burning wastes to the cool shelter of the woods. These oceans, as they might be termed, of sand, so terrific to the eye and the imagination of the human traveller, they boldly venture to cross in large companies in search of the fluid so indispensable to life, but there so scarce, and only found in certain spots. Over the intervening spaces they pass with extraordinary rapidity, and at a great elevation, being the only gallinaceous birds furnished with wings of the form required for such flights. This, however, is not the only peculiarity in which they aberrate from the rest of their order, and approach the pigeons, being said to lay but few eggs, the young

remaining in the nest until they are full fledged, and fed in the mean time by the parents.

The grouse dwell in forests, especially such as are deep, and situated in mountainous districts; the *Bonasia*, however, and the *Tetrao cupido*, frequenting plains where grow trees of various kinds. The *Lagopodes* of the Arctic regions, or ptarmigans, are also found on the very elevated mountains of central Europe, where the temperature corresponds to that of more northern latitudes. Here they keep among the tufts of dwarf willows, which, with pines, form the principal vegetation of these climates. The grouse feed almost exclusively on leaves, buds, berries, and especially the young shoots of trees, pines, spruce, or birch, resorting to seeds only when compelled by scarcity of other food, or when their usual means of subsistence are buried beneath the snow. They sometimes, especially when young, pick up a few insects and worms, and are fond of ants' eggs. Like other gallinaceous birds, they are constantly employed in scratching the earth, are fond of covering themselves with dust, and swallow small pebbles and gravel to assist digestion. No birds are more decidedly and tyrannically polygamous. As soon as the females are fecundated, the male deserts them, caring no farther about them nor their progeny, to lead a solitary life. Like perfidious seducers, they are full of attentions however, and display the greatest anxiety to secure the possession of those they are afterwards so ready to abandon. The nuptial season commences when the leaves first appear in spring. The males then appear quite intoxicated with passion: they are seen, either on the ground, or on the fallen trunks of trees, with a proud deportment, an inflamed and fiery eye, the feathers of the head erected, the wings dropped, the tail widely spread, parading and strutting about in all sorts of extravagant attitudes, and expressing their feelings by sounds so loud as to be heard at a great distance. This season of ardour and abandonment is protracted till June. The deserted female lays, unnoticed by the male, far apart on the ground, among low

and thick bushes, from eight to sixteen eggs, breeding but once in a season. They sit and rear their young precisely in the manner of the common fowl, the chicks being carefully protected by the mother only, with whom they remain all the autumn and winter, not separating until the return of the breeding season. It is only at this period that the males seek the society of the females.

The grouse are remarkably wild, shy, and untameable birds, dwelling in forests or in barren, uncultivated grounds, avoiding cultivated and thickly inhabited countries, and keeping together in families. The *Lagopodes* only live in very numerous flocks, composed of several broods, parting company when the return of spring invites them to separate in pairs of different sexes, which is always done by the birds of this division. Except in the breeding season, the grouse keep always on the ground, alighting on trees only when disturbed, or when going to roost at night; by day retiring to the deepest part of the forest. The flesh of all grouse is delicious food, dark coloured in some, and white in others, the dark being more compact, juicy, and richly flavoured, as in *Tetrao cupido*; while the white, though somewhat dry, is distinguished for delicacy and lightness. Such are the *Bonasiæ*, *T. umbellus* of America, and *T. bonasiæ* of Europe.

The grouse are distinguished by a short stout bill, feathered at base, and they are, of all gallinaceous birds, those in which the upper mandible is the most vaulted; the feathers of the bill are very thick and close, and cover the nostrils entirely; the tongue is short, fleshy, acuminate, and acute; the eye is surmounted by a conspicuous red and papillous naked space; the tarsi are generally spurless in both sexes, and partly or wholly covered with slender feathers, which in the *Lagopodes* are thicker and longer than in the rest, extending not only beyond the toes, but growing even on the sole of the foot—a peculiarity which, agreeably to the observation of Buffon, of all animals is again met with only in the hare. These feathers in winter

become still longer and closer. All the others have the toes scabrous beneath, and furnished with a pectinated row of processes on each side.* This roughness of the sole of the feet enables them to tread firmly on the slippery surface of the ground or frozen snow, or to grasp the branches of trees covered with ice. Their nails are manifestly so formed as to suit them for scratching away the snow covering the vegetables which compose their food. The wings of the grouse are short and rounded; the first primary is shorter than the third and fourth, which are longest. The tail is usually composed of eighteen feathers, generally broad and rounded. The red grouse, *T. scoticus*, however, and the European *Bonasia*, and *T. canadensis*, or spotted grouse, have but sixteen; while our two new North American species have twenty, one of them having these feathers very narrow and pointed, the narrowness being also observed in the sharp-tailed grouse. They have the head small, the neck short, and the body massive and very fleshy.

The females of the larger species differ greatly from the males, which are glossy black, or blackish, while the former are mottled with gray, blackish, and rufous: such are all the typical *Tetraones* of Europe, and the cock of the plains, the dusky, and the spotted grouse of America. The smaller species, in which both sexes are mottled, such as *T. phasianellus* and *T. cupido*, exhibit little or no difference in the plumage of the two sexes; which is also the case in all the *Bonasia* and *Lagopodes*. The young in their first feathers are in all respects like the female, and the males do not acquire their full plumage until after the second moult. All moult twice a-year, and most of the *Lagopodes* change their colours with the seasons in a remarkable manner.

The genus *Tetrao* is now composed of thirteen species,—three *Lagopodes*, two *Bonasia*, and eight typical *Tetraones*. This enumeration does not include

* These processes are liable to fall off, at least in preserved skins.

the *Tetrao rupestris*, which we do not consider well established, any more than the new species of Mr Brehm. The species of *Lagopus*, as might be inferred from their inhabiting high northern latitudes, are common to both continents, with the exception of the red grouse, *T. scoticus*, which is peculiar to the British islands, and which, from its not changing the colours of its plumage with the seasons, may be considered as forming the passage to the true *Tetraones*. Of these, there are five in North America, each and all distinct from the three European. Of the two *Bonasiae*, one is peculiar to the old, and the other to the new continent, the former having sixteen, the latter eighteen feathers to the tail. Thus the entire number is seven in Europe, while it is eight in North America. Setting aside the two common to both, and the respective *Bonasiae*, we may consider the cock of the woods of Europe as the parallel of the cock of the plains of America. The black grouse, *T. tetrix*, will find its equivalent in the dusky grouse, *T. obscurus*; but the *T. hybridus* has no representative in America, any more than the *T. scoticus*. These, however, are more than replaced as to number, by the *T. phasianellus*, *T. cupido*, and *T. canadensis*, all American species, which have none corresponding to them in the old world.

Perhaps no other naturalist has personally inspected all the known species of this genus of both continents, and having examined numerous specimens even of some of the rarest, and possessing all but one in my own collection, my advantages are peculiar for giving a monography of this interesting genus. Such a work it is my intention hereafter to publish, illustrated with the best figures, and accompanied with farther details respecting their habits. In the mean time, I shall merely state, that, being replaced in Africa by *Pterocles*, and in South America by *Tinamus*, all the known species of grouse are found in North America, or in Europe, the European also inhabiting Asia; from whose elevated central and northern regions, yet unexplored, may be

expected any new species that still remain to be discovered. The extensive wilds of North America may also furnish more, though we do not think so; for since we have become acquainted with both sexes of the dusky grouse, and the cock of the plains, we have been able to refer satisfactorily to known species all those of which any indications occur in the accounts of travellers in this country.

North America is exceeded by no country in the beauty, number, and valuable qualities of her grouse; and she is even perhaps superior to all others in these respects, since the discovery of the cock of the plains. Although the careful and accurate researches of Wilson had led him to the belief that there existed but two species of grouse in the territory of the United States, no less than six are now known to inhabit within their boundaries. But we are not aware that any of the subgenus *Lagopus* ever enters the confines of the Union, notwithstanding the pains we have taken to obtain information on this point from the high northern districts of Maine and Michigan, in which, if any where, they are most likely to be discovered. It would however be very extraordinary if these birds, which are found in the Alps of Switzerland, should not also inhabit the lofty ranges of the Rocky Mountains, which are known to be the resort of the various species of grouse. With the exception, therefore, of the well known *Tetrao umbellus*, which belongs to *Bonasia*, all the others are true grouse, *Tetraones*.

The spotted, and the sharp-tailed grouse, were long since known as inhabitants of that part of America north of the United States, but the two others are newly added, not only to our fauna, but to the general system, being found for the first time in the American territory and not elsewhere. For the history of the discovery, the manners, habitation, and a particular description of each of these, we shall refer the reader to their several articles.

The dusky grouse is eminently distinguished from all other known species by having the tail slightly rounded,

and composed of twenty broad and rounded feathers. This peculiarity of the extraordinary number of tail-feathers, is only found besides in the cock of the plains, in which, however, they are not rounded, but very slender, tapering, and acute. In size and colour the dusky grouse may be compared to the black grouse of Europe, so remarkable for the outward curvature of the lateral feathers of the tail.

The present specimen is that on which Say established the species: it was killed on a mountain in the great chain dividing the waters of the Mississippi from those which flow towards the Pacific, at a spot where, on the 10th of July, 1820, the exploring party of Major Long were overlooking, from an elevation of one or two thousand feet, a wide extent of country. A small river poured down the side of the mountain through a deep and inaccessible chasm, forming a continued cascade of several hundred feet. The surface of the country appeared broken for several miles, and in many of the valleys could be discerned columnar and pyramidal masses of sandstone, some entirely naked, and others bearing small tufts of bushes about their summits. When the bird flew, and, at the unexpected moment of its death, it uttered a cackling note, somewhat resembling that of the domestic fowl.

The female dusky grouse is eighteen inches in length. The bill measures precisely an inch, which is small in proportion; it is blackish, with the base of the under mandible whitish. The general colour of the plumage is blackish brown, much lighter on the neck and beneath, all the feathers having two or three narrow bars of pale ochreous, much less pure and bright on the neck and breast; the small short feathers at the base of the bill covering the nostrils are tinged with ferruginous, those immediately nearest the forehead have but a single band, and are slightly tipped, while the larger ones of the neck, back, rump, and even the tail-coverts, as well as the feathers of the breast, have two bands and the tip. These rufous terminal margins, on the upper portion of the back, and on the tail-

coverts, are broad, and sprinkled with black, so as to be often blended with the lower band. The sides of the head and the throat are whitish, dotted with blackish, the black occupying both sides of each feather, deepening and taking a bandlike appearance on the inferior portion of the upper sides of the neck; on each feather of the breast is a whitish band that becomes wider on those nearest the belly; the flanks are varied with rufous, each feather having, besides the small tip, three broad cross lines of that colour, and a white spot at the tip of the shaft, increasing in size as they are placed lower; the belly feathers are plain dull cinereous, the lower tail-coverts are white, black at their base, with one or two black bands besides, and tinged between the bands with grayish ochreous; the wings are nine and a half inches long, with the third and fifth primaries subequal, the coverts, as well as the scapulars, are of the general colour, with about two bands, the second of which is sprinkled as well as the tip, each feather being white on the shaft at tip; the primaries, secondaries, and outer wing-coverts, including their shafts, are plain dusky; the secondaries have ochreous zigzag marks on their outer webs, and are slightly tipped with dull whitish; the primaries themselves are somewhat mottled with dingy white externally, but are notwithstanding entirely without the regular white spots so remarkable in other grouse; the lower wing-coverts, and long axillary feathers, are pure white. The tail measures in length seven and a half inches, is very slightly rounded, of twenty broad feathers, of which the lateral are plain blackish, with the exception of a few whitish dots at the base of their outer webs, and the middle ones being varied with rufous dots disposed like the bands across their whole width; all are thickly dotted with gray for half an inch at tip, which in the specimen described, but by no means so much so in others, gives the tail an appearance of having a broad terminal band of cinereous sprinkled with blackish. This circumstance evinces the inutility of describing with the extreme minuteness to which we have

descended in this instance, as, after all the pains bestowed, the description is only that of an individual. The tail is pure black beneath, considerably paler at tip and on the undulations of the middle feathers. The tarsus is three quarters of an inch long; the feathers with which it is covered, together with the femorals, are pale grayish ochreous, undulated with dusky; the toes are dusky, and the nails blackish.

The male is but little larger, and entirely, but not intensely black. We can, however, say very little about it, having taken but a hasty and imperfect view of a specimen belonging to Mr Sabine of London, and writing merely from recollection. The tail-feathers are wholly black, perfectly plain and unspotted; and in the female and young, they are but slightly mottled, as is seen in almost all grouse. Mr Sabine has long had this bird in his possession, and intended dedicating it, as a new species, to that distinguished traveller, Dr Richardson.

43. *TETRAO PHASIANELLUS*, LIN. — SHARP-TAILED GROUSE.

BONAPARTE, PLATE XIX. — EDINBURGH COLLEGE MUSEUM.

THIS species of grouse, though long since said to inhabit Virginia, is, in fact, a recent acquisition to the Fauna of the United States; for it was only through an awkward mistake that it was ever attributed to that country. Mitchell, upon an inspection of Edward's bad drawing of this bird, mistaking it for the ruffed grouse of that and the neighbouring states, declared it to be an inhabitant of Virginia; and upon his authority Edwards gave it as such. This statement, however, led Wilson into the erroneous belief of the identity of the two species, in which he was farther confirmed, when, after the most careful researches, he became satisfied that the ruffed grouse was the only species to be found in Virginia.

The gallant and lamented Governor Lewis gave the first authentic information of the existence of this bird

within the limits of these States. He met with it on the upper waters of the Missouri, but observes, that it is peculiarly the inhabitant of the great plains of the Columbia. He states also, that the scales, or lateral processes of the toes, with which it is furnished in winter, like the rest of its genus, drop off in summer.

Say introduced the species regularly into the scientific records of his country. The expedition under Major Long brought back a specimen now in the Philadelphia Museum, from which, though a female, and unusually light coloured, we have taken our description, on account of its having been procured in the American territory. The bird is never seen in any of the Atlantic states, though numerous in high northern latitudes. It is common near Severn River and Albany Fort, inhabiting the uncultivated lands in the neighbourhood of the settlements, and particularly near the southern parts of Hudson's Bay, being often killed in winter near Fort York; but it does not extend its range to Churchill. Near Fort William, on Lake Superior, the sharp-tailed grouse is also found in spring, and we have seen specimens killed in winter at Cumberland House, and others at York Factory in summer. In collections it is very rare; and Temminck, when he wrote his history of gallinaceous birds, had never seen a specimen, nor did it exist at the time in any European museum.

It is by the shape of the tail that this grouse is eminently distinguished from all others. The English name which we have, with Mr Sabine, selected from Pennant, is much more applicable than that of long-tailed, given by Edwards; for instead of being long, it is, except the middle feathers, remarkably short, cuneiform, and acute, more resembling that of some ducks than of the pheasant. By the elongated feathers, but in no other particular, this species approaches the African genus *Pterocles*. At Hudson's Bay it is called pheasant, a name which, though inappropriate, seems, at least, better applied to this than the ruffed grouse.

The original writers that have mentioned this grouse are, Edwards, who first introduced it, and has figured

the female from a badly stuffed specimen, being, however, the only figure before ours; Pennant; Hearne, who has given the most information concerning its habits, derived from personal observation; and Forster, who has described it with accuracy. Linné at first adopted it from Edwards, but afterwards most unaccountably changed his mind, and considered it as a female of the European cock of the woods. It was restored by Latham and others to its proper rank in the scale of beings.

The sharp-tailed grouse is remarkably shy, living solitary, or by pairs, during summer, and not associating in packs till autumn; remaining thus throughout the winter. Whilst the ruffed grouse is never found but in woods, and the pinnated grouse only in plains, the present frequents either indifferently. They, however, of choice, inhabit what are called the juniper plains, keeping among the small juniper bushes, the buds constituting their principal food. They are usually seen on the ground, but when disturbed, fly to the highest trees. Their food in summer is composed of berries, the various sorts of which they eagerly seek: in winter they are confined to the buds and tops of evergreens, or of birch and alder, but especially poplar, of which they are very fond. They are more easily approached in autumn than when they inhabit large forests, as they then keep alighting on the tops of the tallest poplars, beyond the reach of an ordinary gun. When disturbed in that position, they are apt to hide themselves in the snow; but Hearne informs us, that the hunter's chance is not the better for that; for so rapidly do they make their way beneath the surface, that they often suddenly take wing several yards from the spot where they entered, and almost always in a different direction from that which is expected.

Like the rest of its kind, the sharp-tailed grouse breeds on the ground near some bush, making a loose nest with grass, and lining it with feathers. Here the female lays from nine to thirteen eggs, which are white spotted with blackish. The young are hatched about

the middle of June; they utter a piping noise, somewhat like chickens. Attempts have been repeatedly made to domesticate them, but have as constantly failed, all the young, though carefully nursed by their stepmother, the common hen, dying one after another, probably for want of suitable food. This species has several cries: the cock has a shrill crowing note, rather feeble; and both sexes, when disturbed, or whilst on the wing, repeat frequently the cry of *cack, cack*. This well known sound conducts the hunter to their hiding place, and they are also detected, by producing with their small, lateral, rigid tail-feathers, a curious noise, resembling that made by a winnowing fan. When in good order, one of these grouse will weigh upwards of two pounds, being very plump. Their flesh is of a light brown colour, and very compact, though, at the same time, exceedingly juicy and well tasted, being far superior in this respect to the common ruffed, and approaching in excellence the delicious pinnated grouse.

The adult male sharp-tailed grouse, in full plumage, is sixteen inches long, and twenty-three in breadth. The bill is little more than an inch long, blackish, pale at the base of the lower mandible, and with its ridge entering between the small feathers covering the nostrils: these are blackish, edged with pale rusty, the latter predominating; the irides are hazel. The general colour of the bird is a mixture of white, and different shades of dark and light rusty, on a rather deep and glossy blackish ground, the feathers of the head and neck have but a single band of rusty, and are tipped with white; those, however, of the crown, are of a much deeper and more glossy black, with a single marginal spot of rusty on each side, and a very faint tip of the same, forming a tolerably pure black space on the top of the head. The feathers between the eye and bill, those around the eye, above and beneath, on the sides of the head, and on the throat, are somewhat of a dingy yellowish white, with a small black spot on each side, giving these parts a dotted appearance; but the dots fewer and smaller on the throat. The feathers of

the back and rump are black, transversely varied on the margin and at tip, with pale bright rusty, sprinkled with black, forming a confused mixture of black and rusty on the whole upper parts of the bird; the long loose-webbed upper tail-coverts being similar, but decidedly and almost regularly banded with black, and sprinkled with rusty, this colour being there much lighter and approaching to white, and even constituting the ground colour. The breast is brown, approaching to chocolate, each feather being terminated by a white fringe, with a large arrow-shaped spot of that colour on the middle of each feather, so that, when the plumage lies close, the feathers appear white with black crescents, and are generally described so. On the lower portion of the breast, the white spots, as they descend, become longer and narrower, the branches forming the angle, coming closer and closer to each other, till the spot becomes a mere white streak along the shaft, but, at the same time, the white marginal fringe widens so considerably, that the feathers of the belly may be properly called white, being brown only at their base, but the shaft is white even there, with no more than a brown heart-shaped spot visible on the middle. The heart-shaped brown spots of the belly become so very small at the vent, that this part appears pure white, with a few very small blackish spots; the long flank feathers are broadly banded with black and white, somewhat tinged with ochrous exteriorly; the under tail-coverts are white, blackish along the shafts, and more or less varied with black in different specimens, which also vary considerably as to the size and shape of all the spots, being in some more acute, in others more rounded, &c. The wings are eight inches long, the third and fourth primaries being the longest; the scapulars are uniform with the back, but, besides the rusty sprinkling of the margins and tip, the largest have narrow bandlike spots of a pure bright rufous, a slight whitish streak along the shaft in the centre, and a large white spot at the end. The smaller wing-coverts are plain chocolate brown; the spurious wing, and

outer coverts, are of the same brown, but each feather bears at the point a large and very conspicuous pure white spot; all the other superior coverts are blackish, sprinkled, and banded with rusty, each furnished with a conspicuous terminal spot; the under wing-coverts, together with the long axillary feathers, are pure white, each with a single small dusky spot, and are marbled with white and brownish on the outer margin; the quills are plain dusky brown, the primaries being regularly marked with pure white spots half an inch apart on their outer webs, except at the point of the first; the longest feather of the spurious wing, and the larger outer coverts, have also a pair of these spots; the secondaries, besides the outer spots, which assume the appearance of bands, are tipped with pure white, forming a narrow terminal margin; those nearest the tertials are also slightly marked with rusty; the tertials themselves are similar to the scapulars, that is, they are black, banded and sprinkled with different shades of rusty; the tail is strongly cuneiform and graduated, of eighteen feathers, with the middle five inches long, which is three more than the outer. According to some accounts, the two middle feathers are by more than two inches longer than the adjoining, but, in all we have examined, the difference was little more than an inch; the four middle are similar in shape, texture, and colour, being narrow, flaccid, equal in breadth throughout, though somewhat dilated and cut square at the end. In colour, they vary considerably in different specimens, the ground being generally black, and the tips white, but more or less varied, in some with white, and in others with rusty; these colours being at one time pure, at another sprinkled with blackish, and assuming various tints; in one specimen they are disposed in spots, in another in bands, lines, chains, angles, &c.; but generally in a long stripe on each side of the shaft at base, and in transverse spots at the point of the two longest, while they are in round spots all along each side of the two shortest: in one specimen, the latter are even almost plain, being dingy white,

sprinkled with blackish on the whole of their outer web; all the other lateral feathers, entirely concealed by the coverts, are pure white at the point, but with dusky shafts, and are more or less broadly dark cinereous at base; these feathers are very rigid, and of a curious form, tapering from the base to the point, where they suddenly dilate; they are deeply emarginated at tip, and their inner lobe projects considerably; the tarsus is two inches long; the slender hair-like feathers covering it, are, as well as the femorals, of a dingy grayish white, obsoletely waved with dusky; the toes are strongly pectinated, and are, as well as the nails, of a blackish dusky, while the long processes are whitish.

The foregoing minute description is chiefly taken from a handsome male specimen from Arctic America. There is no difference between the sexes, at least we have not been able to detect any in all the specimens of both that we have examined; hence we conclude that the difference generally described by authors, and which we have ourselves copied in our Synopsis, that of the breast being chocolate brown in the male, and uniform with the rest of the plumage in the female, does not exist. The female is merely less bright and glossy. Both sexes, like other grouse, have a papillous red membrane over the eye, not always seen in stuffed skins, and which is said to be very vivid in the male of this species in the breeding season. This membrane, an inch in length, becomes distended, and projects above the eye in the shape of a small crest, three-eighths of an inch high. The male at this season, like that of other species, and indeed of most gallinaceous birds, struts about in a very stately manner, carrying himself very upright; the middle feathers of the tail are more or less elongated, in young birds scarcely exceeding the adjoining by half an inch.

The spring plumage is much more bright and glossy than the autumnal, and also exhibits differences in the spots and markings. The female specimen we have selected for the following description, on account of its being the only one we had from the United States

territory ; it is in the autumnal dress, and was brought from the Rocky Mountains by the expedition under Major Long. It is now in the Philadelphia Museum, and we think proper to insert here in detail the description we took from it at the time, thus enabling the reader to contrast it with that made from a northern specimen in spring plumage, rather than point out each and all the numerous, and at the same time minute and unimportant, variations.

This female was fifteen inches long ; its general colour mottled with black and yellowish rufous ; the feathers of the head above are yellowish rufous banded with black, the shaft yellowish ; a line above the eye, the cheeks, and the throat, are pure yellowish rusty, with very few blackish dots, and a band of the latter colour from the bill beneath the eye, and spreading behind ; all the lower parts are whitish cream, with a yellowish rusty tinge ; each feather of the neck and breast, with a broad blackish subterminal margin, in the shape of a crescent, becoming more and more narrow and acute as they are lower down on the belly, until the lowest are reduced to a mere black mark in the middle ; the lower tail-coverts and the femorals are entirely destitute of black ; all the upper parts, viz. the back, rump, upper tail-coverts, and scapulars, have a uniform mottled appearance of black and rusty, each feather being black with rusty shafts, spots, bands, or margins, the rusty again minutely dotted with black ; on the rump, but especially on the tail-coverts, the rusty predominates in such a manner that each feather becomes first banded with black and rusty, then decidedly rusty, varied with black, which, however, does not change in the least the general effect. The wing-coverts are dusky, each with a large round white spot at tip, the inner gradually taking the markings of the back and scapulars ; the lining of the shoulder is plain dusky, as well as the spurious wing and the primaries, each feather of the spurious wing having about five large round spots of white on its outer web ; the primaries are regularly marked on the

same side with eight or ten squarish, equidistant, white spots, with a few inconspicuous whitish dots on their inner web besides; the secondaries are also dusky, but in them the spots take the appearance of bands continued across the whole feather, of which bands there are three or four, including the terminal; the inner secondaries become darker and darker as they approach the body, the white becomes rufous, the dots are more frequent, and they become confounded with the scapulars, and are banded and mottled with various tints of black and rusty; the lower wing-coverts and long axillary feathers are pure white, the outer coverts being marbled with dusky. The tail is composed of eighteen feathers; it is cuneiform, very short, and entirely hidden by the coverts, except the four middle feathers; the two middle feathers are flaccid, narrow, equal in breadth throughout, longer than the others by more than an inch, rusty, crossed by chained bands of black, and dotted with black and whitish at tip; the two next are also longer than the others, nearly whitish, but almost similar in shape, markings, and texture, to the longest; the lateral decrease in size very fast from the centre, but by regular degrees, and are remarkably stiff, somewhat like those of woodpeckers, wider at base and tip than in the middle, pure white at the end and on the inner web, the shaft black, and the outer web dotted with blackish; they are deeply emarginated at tip, the inner lobe being longer, acute, and singularly shaped.

44. *TETRAO CANADENSIS*. — SPOTTED GROUSE.

BONAPARTE, PLATF XX. MALE ; PLATE XXI. FIG. 1. FEMALE.
EDINBURGH COLLEGE MUSEUM.

As may be seen by the synonymy, two separate species have been made of the present, the male and female being taken for different birds. This error, which originated with Edwards and Brisson, from whom it was copied by Linné, was rectified by Buffon, Forster, and others; and in their decision Gmelin,

Latham, and all subsequent writers have acquiesced. Both sexes were tolerably well figured by Buffon, as they had also been previously by Edwards.

The spotted grouse is well characterized by its much rounded tail, of but sixteen broad and rounded feathers, and may be at once distinguished from all others by the large and conspicuous white spots ornamenting the breast, flanks, and under tail-coverts. It has been inaccurately compared with the European *Tetrao bonasia*, from which it differs very materially, not even being of the same subgenus, and approaching nearer, if indeed it can be compared with any, to the *Tetrao urogallus*.

This bird is common at Hudson's Bay throughout the year, there frequenting plains and low grounds, though in other parts of America it is found on mountains, even of great elevation. It inhabits Canada in winter, and was seen by Vieillot in great numbers during the month of October, in Nova Scotia. Lewis and Clark met with it on the elevated range of the Rocky Mountains, and brought back from their western expedition a male specimen, now deposited in the Philadelphia Museum, where it has been long exhibited under the name of Louisiana grouse. This, as truly observed by Say, first entitled it to rank among the birds of the United States. But the Rocky Mountains are not the only region of the United States territory where the spotted grouse is found. We have traced it with certainty as a winter visitant of the northern extremity of Maine, Michigan, and even of the state of New York, where, though very rare, it is found in the counties of Lewis and Jefferson. On the frontiers of Maine it is abundant, and has been seen by Professor Holmes, of the Gardiner Lyceum, near Lake Umbagog and others. In these countries, the spotted grouse is known by the various names of wood partridge, swamp partridge, cedar partridge, and spruce partridge. The American settlers of Canada distinguish it by the first. In Michigan and New York, it goes generally by the second. In Maine it bears the third, and in other parts

of New England, New Brunswick, &c. more properly the last. We have been informed by General Henry A. S. Dearborn, that they are sent from Nova Scotia and New Brunswick to Boston, in a frozen state; as in the north they are known to be so kept hanging throughout the winter, and when wanted for use, they need only be taken down, and placed in cold water to thaw. General Dearborn, to whom we are much indebted for the information which his interest for science has induced him voluntarily to furnish, farther mentions, that he has heard from his father, that, during the progress of the expedition under Arnold, through the wilderness to Quebec, in 1775, these grouse were occasionally shot between the tide waters of Kennebeck river and the sources of the Chaudière, now forming part of the state of Maine. Fine specimens of the spotted grouse have been sent to the Lyceum of Natural History of New York, from the Sault de Ste. Marie, by Mr Schoolcraft, whose exertions in availing himself of the opportunities which his residence affords him, for the advancement of every branch of zoology, merit the highest praise. He informs us, that this bird is common from Lake Huron to the sources of the Mississippi, being called in the Chipeway language, mushcodasee, i. e. partridge of the plains.

The favourite haunts of the spotted grouse, are pine woods and dark cedar swamps, in winter resorting to the deep forests of spruce, to feed on the tops and leaves of these evergreens, as well as on the seeds contained in their cones, and on juniper berries. Hence their flesh, though at all times good, is much better in summer, as in winter it has a strong flavour of spruce. At Hudson's Bay, where they are called indifferently wood or spruce partridge, they are seen throughout the year. Like other grouse, they build on the ground, laying perhaps fewer eggs; these are varied with white, yellow, and black. They are easily approached, being unsuspicious, and by no means so shy as the common ruffed grouse, and are killed or trapped in numbers, without much artifice being necessary for this purpose.

When much disturbed, like their kindred species, they are apt to resort to trees, where, by using the precaution of always shooting the lowest, the whole of the terrified flock may be brought down to the last bird.

The spotted grouse is smaller than the common partridge or pheasant, being but fifteen inches in length. The bill is black, seven-eighths of an inch long. The general colour of the plumage is made up of black and gray, mingled in transverse wavy crescents, with a few of grayish rufous on the neck. The small feathers covering the nostrils, are deep velvety black. The feathers may all be called black as to the ground colour, and blackish plumbeous at the base; on the crown, upper sides of the head above the eye, and the anterior portion of the neck, they have each two gray bands or small crescents, and tipped with a third; these parts, owing to the gray margin of the feathers being very broad, appear nearly all gray; these longer feathers of the lower part of the neck above, and between the shoulders, are more broadly and deeply black, each with a reddish band, and gray only at tip; the lowest have even two reddish bands, which pass gradually into grayish; a few of the lateral feathers of the neck are almost pure white; all the remaining feathers of the upper parts of the body have two grayish bands, besides a slight tip of the same colour; some of the lowest and longest having even three of these bands, besides the tip. The very long upper tail-coverts are well distinguished, not only by their shape, but also by their colours, being black brown, thickly sprinkled on the margins with grayish rusty, and a pretty well defined band of that colour towards the point, then a narrow one of deep black, and are broadly tipped with whitish gray, more or less pure in different specimens; their shafts, also, are brownish rusty. The sides of the head beneath the eyes, together with the throat, are deep black, with pure white spots, the white lying curiously upon the feathers, so as to form a band about the middle, continued along the shaft, and spreading at the point; but the feathers being small on these parts, the

white spots are not very conspicuous. The breast, also, is deep black, but each feather broadly tipped with pure white, constituting the large spots by which this species is so peculiarly distinguished. On the flanks, the feathers are at first, from their base, waved with black and grayish rusty crescents; but these become gradually less pure and defined, and by getting confused, make the lowest appear mottled with the two colours; all are marked along the shaft with white, dilating at tip, forming on the largest a conspicuous terminal spot. The vent is for a space pure white, the tips of its downy feathers being of that colour: the under tail-coverts are deep black, pure white for half an inch at their tip, and with a white mark along the shaft besides. The wings are seven inches long, the fourth primary alone being somewhat longer than the rest. The upper coverts and scapularies are blackish, waved and mottled with grayish rusty; the longest scapularies have a small terminal spot of pure white along their shaft. The smaller coverts are merely edged with grayish rusty, and, in very perfect specimens, they are even plain; the under wing-coverts are brownish dusky, edged with grayish, some of the largest, as well as the long axillary feathers, having white shafts, dilating into a terminal spot; the remaining inferior surface of the wing is bright silvery gray: the spurious wing and the quills are plain dusky brown, the secondaries being slightly tipped and edged externally with paler, and those nearest the body somewhat mottled with grayish rusty at the point, and on the inner vane; the primaries, with the exception of the first, are slightly marked with whitish gray on their outer edge, but are entirely destitute of white spots. The tail is six inches long, well rounded, and composed of only sixteen feathers. These are black, with a slight sprinkling of bright reddish on the outer web at base, under the coverts, which disappears almost entirely with age; all are bright dark rusty for half an inch at their tip, this colour itself being finely edged and shafted with black. The tarsus measures an inch and a half, its feathers,

together with the femorals, are dingy gray, slightly waved with dusky; the toes are dusky; the lateral scales dingy whitish, and the nails blackish.

The female is smaller than the male, being more than an inch shorter. The general plumage is much more varied, with less of black, but much more of rusty. There is a tinge of rufous on the feathers of the nostrils; those of the head, neck, and upper part of the back, are black, with two or three bright bands of orange rusty, and tipped with gray; there is more of the gray tint on the neck, on the lower part of which above, the orange bands are broader; all the remaining parts of the body above, including the tail-coverts, are more confusedly banded and mottled with duller rusty, orange, and gray, on a blackish ground, these colours themselves being also sprinkled with a little black; the sides of the head, the throat, and all the neck below, are dull rusty orange, each feather varied with black; on the lower portion of the breast, the black bands are broad and very deep, alternating equally with the orange rusty, and even gradually encroaching upon the ground colour; the breast is deep black, each feather, as well as those of the under parts, including the lower tail-coverts, are broadly tipped with pure white, forming over all the inferior surface very large and close spots, each feather having besides one or two rusty orange spots, much paler and duller on the belly, and scarcely appearing when the plumage lies close: the feathers of the flanks are blackish, deeper at first, and barred with very bright orange, then much mottled with dull grayish rusty, each having a triangular white spot near the tip. The wings and tail are similar to those of the male, the variegation of the scapulars and upper coverts being only of a much more rusty tinge, dull orange in the middle on the shaft, all the larger feathers having, moreover, a white streak along the shaft, ending in a pure white spot, wanting in the male. The outer edge of the primaries is more broadly whitish, and the tertials are dingy white at the point, being also crossed with dull orange; the tail feathers, especially

the middle ones, are more thickly sprinkled with rusty orange, taking the appearance of bands on the middle feathers, their orange coloured tip being, moreover, not so pure, and also sprinkled.

The present bird comes from the Rocky Mountains: it is a male, and remarkably distinguished from the common ones of his species, by having the tail-feathers entirely black to the end. This difference I have observed to be constant in other specimens from the same wild locality; whilst all the northern specimens, of which I have examined a great number, are alike distinguished by the broad rufous tip, as in those described, and as also described by Linné and all other writers, who have even considered that as an essential mark of the species. The Rocky Mountain specimens are, moreover, somewhat larger, and their toes, though likewise strongly pectinated, are, perhaps, somewhat less so, and the tail-coverts are pure white at tip. But, Heaven forbid that our statements should excite the remotest suspicion, that these slight aberrations are characteristic of different species! If we might venture an opinion not corroborated by observation, we would say, that we should not be astonished, if the most obvious discrepancy, that of the tail, were entirely owing to season, the red tip being the full spring plumage; though it is asserted, that this species does not vary in its plumage with the seasons.

45. *TETRAO UROPHASIANUS*, BONAPARTE.

COCK OF THE PLAINS.

BONAPARTE, PLATE XXI. FIG. II.

It is with the liveliest satisfaction that we are enabled finally to enrich the North American Fauna with the name and description of this noble bird; which must have formed from the earliest periods a principal ornament of the distant wilds of the west. Hardly inferior to the turkey in size, beauty, and usefulness, the cock of the plains is entitled to the first place in

the beautiful series of North American grouse, in the same rank that the cock of the woods so justly claims among those of Europe and Asia.

This fine bird, like its European analogue, seems to be restricted within certain bounds, and is probably nowhere numerous, owing to its bulk, limited powers of flight, and the eagerness with which it is pursued; but chiefly to its polygamous habits, which are the cause of desperate combats between the males for the possession of the females. However long the period since it was first heard of in the accounts of hunters and travellers, no more was known than that there existed in the interior of America a very large species of grouse, called by the hunters of the west the prairie turkey. We have little to add, it is true, to what is known of its habits, but we have it in our power to say that we have seen it; we can determine its place in the system; and now give a faithful description of at least one sex.

We have again to acknowledge ourselves indebted, no less to the industry and sagacity, than to the liberal views of Mr Leadbeater, for the present opportunity of representing this bird. His invaluable collection contains the only specimen known to be anywhere preserved.

The name of cock of the plains was given by Lewis and Clark, and we have retained it, as being not only appropriate, but at the same time analogous to that of the large European species called cock of the woods. Similar reasons have influenced us in selecting the scientific name, which, though perhaps too long, and ill compounded, has nevertheless the advantage of combining analogy in meaning with the indication of a most remarkable characteristic of the bird. This species is in fact distinguished from all others of its genus, and especially from its European analogue, by its long tail, composed of twenty narrow, tapering, acute feathers; thus evincing the fallacy of the character erroneously attributed to all the grouse, of having broad and rounded tail-feathers. It is a singular fact, that

both of the newly discovered species from the north-western part of America, and they only, should be distinguished by the extraordinary number of the feathers of the tail. In the dusky grouse, however, they are broad and rounded. The cock of the woods, like the greater part of the species, has but eighteen, which are also broad and rounded. The only grouse in which they are found narrow is the sharp-tailed, though without being either acute or tapering, but on the contrary square at tip, and of equal breadth throughout, or, if any thing, the lateral rather broader at the tip.

Lewis and Clark first met with this bird on their journey westward, near the fountain of the Missouri, in the heart of the Rocky Mountains. They inform us that it is found on the plains of the Columbia in great abundance, from the entrance of the southeast fork of the Columbia to that of Clark's River. It appears also to extend to California, for there can be but little doubt that it is the bird erroneously called bustard by the travellers who have visited that country. Lewis and Clark state, that in its habits it resembles the grouse, (meaning probably *T. phasianellus*,) except that its favourite food is the leaf and buds of the pulpy-leaved thorn. The gizzard is large, and much less compressed and muscular, than in most gallinaceous birds, and perfectly resembles a maw. When the bird flies, he utters a cackling note, not unlike that of the domestic fowl. The flesh of the cock of the plains is dark, and only tolerable in point of flavour, and is not so palatable as either that of the pheasant or grouse. It is invariably found in the plains.

The cock of the plains is precisely equal in size to the cock of the woods; at least such is the result of a comparison of the female with the corresponding sex of the European bird, both lying before us. Each part exactly coincides in form and dimension, excepting that the tail rather gives the superiority to the American, so that if the male bears the same relative proportion to his female, the cock of the plains must be proclaimed

the largest of grouse. The two females are strikingly similar. The cock of the plains is, however, a much more grayish bird, wanting entirely the reddish that mottles, and occupies so much of the plumage of its analogue. This, the total want of beard-like appendages, and the singular shape of the tail, are the prominent discriminative features; to which may be added, that the under wing-coverts, marbled with black in the European, are pure white in our new species, though this, as well as the want of reddish, might be ascribed to the youth of our specimen. However this may be, the remaining differences will be better estimated by attending to the following minute and accurate description.

The female of the cock of the plains, is from twenty-eight to thirty inches in length. The bill is one inch and a quarter long, perfectly similar to that of *T. urogallus*, perhaps a trifle less stout, and with the base (if this remarkable character be not accidental in our specimen,) farther produced among the feathers of the front; the whole plumage above is blackish, most minutely dotted, mottled, and sprinkled with whitish, tinged here and there with very pale yellowish rusty, hardly worth mentioning; on the head, and all the neck, the feathers being small, minutely crossed transversely with blackish and whitish lines, gives the plumage quite a minutely dotted appearance; the superciliar line is slightly indicated by more whitish; on a spot above the eye, in the space between the bill and eye, and along the mouth beneath, the black predominates, being nearly pure: on the throat, on the contrary, it is the white that prevails, so as to be whitish dotted with black; on the lower portion of the neck, the black again is the prevailing colour, the black feathers there being nearly tipped with grayish; the sides of the neck are pure white for a space; from the lower portion of the neck to the upper tail-coverts inclusively, the back, scapulars, wing-coverts, and secondaries, the blackish feathers have each two or three yellowish white bands, which are broader, espe-

cially on the upper part of the back, and are moreover sprinkled with white somewhat tinged with rusty; the scapulars and wing-coverts are besides shafted with white somewhat dilating towards the point, the scapulars being of a deeper black; the spurious wing and primaries are plain dusky, with paler edges, the outer with some indications of whitish dots (generally found in grouse) on the outer vane, but no regular white spots; the secondaries are tipped with white, and those which are next to the primaries nearly plain on their inner web; the primaries are rather slender, the inferior surface of the wings is of a very pale silvery gray; the under wing-coverts and long axillary feathers being pure silvery white, excepting on the lining of the wing, which is dusky blackish; the wings are twelve inches long; the breast is grayish, somewhat mottled with black; on each side below is a pure white space, some of the feathers of which are tipped or banded with black; the large feathers of the flanks are blackish, shafted with white, crossed by several whitish bands, and sprinkled with yellowish; a broad oblong patch of deep brownish black occupies the whole of the belly and vent, the outer feathers being shafted with white, and broadly white at the point of their outer webs; the femorals and small feathers of the tarsus extending between the toes are yellowish gray, minutely waved with blackish; the tarsus measures two inches; the toes are dusky black, and the pectinated row of processes long, strong, and dingy whitish; the nails, blackish; the whole base of the plumage, with the exception of that of the neck beneath, which is white, is of a dusky gray. The tail is ten inches long, and in colour, is, as well as its coverts, in harmony with the rest of the plumage; the ground colour is blackish, and crossed or rather mottled with bands of whitish spots disposed irregularly, between which are small additional darker spots; the two middle ones are mottled all over, but the others are almost immaculate on their inner vane, and at the point,—hence the lower surface of the unexpanded tail is of a silvery gray, much darker than that of the

wings; at the very tip of the tail-feathers, the middle excepted, appears a very small whitish spot, the two outer pairs being rather broadly yellowish white, dotted with blackish on that part; the tail is composed of twenty feathers, the highest number ever met with in any tribe of birds. Although it appears strongly cuneiform, owing to the remarkable shape and curve of the feathers, it is, when expanded and properly examined, nothing more than much rounded; the two in the middle, which are the longest, reaching but a trifle beyond the adjoining, and so on in succession, the difference in length increasing progressively, but very gradually at first, and more and more as they are distant from the centre, there being nearly an inch difference between the third and second, and full that between the second and the outer, which is only six inches long, while the middle is ten. All the twenty are narrow, tapering, acute, and falciform, turning inward. Those toward the middle are less curved, but more conspicuously acuminate and narrow for nearly two inches, all but the middle ones being slightly square at their narrow tips.

Though we have reason to believe that the specimen described is a female, yet, from the broad patch upon the belly, and other marks unnecessary to be specified, we should not be surprised at its being a young male just beginning to change. In that case, and supposing him to have attained his full growth, this species would prove to be inferior in size to the cock of the woods, as its male would only be equal to the female of the latter.

SYNONYMS;

OR,

**NAMES GIVEN TO THE DIFFERENT BIRDS IN
BONAPARTE'S AMERICAN ORNITHOLOGY,
BY TRAVELLERS AND NATURALISTS.**

p. 59. *Selby, Ill. Brit. Orn.* 1, p. 26, pl. 10, fig. 1, male; fig. 2, female. *Savi, Orn. Tosc.* 1, p. 63. *Nob. Cat. and Syn. Birds U. S.* sp. 22. — *Falco pygargus*, *Linn. Syst.* 1, p. 126, sp. 11. *Gmel. Syst.* 1, p. 277, sp. 11, female and young. — *Falco Hudsonius*, *Linn. Syst.* 1, p. 128, sp. 19. *Gmel. Syst.* 1, p. 277, sp. 19, young, American. — *Falco Bohemicus*, *Gmel. Syst.* 1, p. 276, sp. 107. *Lath. Ind.* p. 38, sp. 93, adult male. — *Falco Albicans*, *Gmel. Syst.* 1, p. 276, sp. 102. *Lath. Ind.* p. 38, sp. 93, adult male. — *Falco griseus*, *Gmel. Syst.* 1, p. 275, sp. 100. *Lath. Ind.* p. 37, sp. 86. *Gerard, Tabl. Elem.* p. 37, adolescent male. — *Falco montanus*, var. B. *Gmel. Syst.* 1, p. 278, sp. 106. *Lath. Ind.* p. 48, sp. 116. — *Falco cinereus*, *It. Poseg.* p. 27, adolescent male. — *Falco albicollis*, *Lath. Ind.* p. 36, sp. 81, adult South American male. — *Falco Buffonii*, *Gmel. Syst.* 1, p. 277, sp. 103, female and young, American. — *Falco uliginosus*, *Gmel. Syst.* 1, p. 278. *Lath. Ind.* p. 40, sp. 95. *Sabine, Zool. App. to Frankl. Exped.* p. 671, young American. — *Falco rubiginosus*, *It. Poseg.* p. 29. *Lath. Ind.* p. 27, sp. 56, young. — *Falco ranivorus*, *Daudin, Orn.* 2, p. 170. *Lath. Ind. Suppl.* p. 7, young. — *Falco europogistus*, *Daud. Orn.* 2, p. 110, adolescent male. — *Circus europogistus*, *Vieillot, Ois. Am. Sept.* 1, p. 36, pl. 8, adolescent male. — *Circus Hudsonius*, *Vieill. l. c.* 1, p. 36, pl. 9, young. — *Circus uliginosus*, *Vieill. l. c.* 1, p. 37, female and young. — *Circus variegatus*, *Vieill. l. c.* 1, p. 37, male changing. — *Circus gallinarius*, *Vieill. Nouv. Dict. d'Hist. Nat.* 4, p. 459. *Circus cyaneus*, *Id.* 31, p. 410. — *Circus cyaneus*, *Boie. Circus ranivorus*, *Vieill. Nouv. Dict. d'Hist. Nat.* 4, p. 456, young, African. — *Falco strigiceps*, *Nills. Orn. Suec.* 1, p. 21. — *Falco torquatus*, *Briss. Orn.* 1, p. 345, sp. 7. *Id.* 8vo, p. 100, male and female, *Brunn.* sp. 14. — *Falco montanus cinereus*, *Briss. Orn.* 1, p. 355, sp. 9, var. A. *Id.* 8vo, p. 112, adolescent male. — *Accipiter Freti Hudsonis*, *Briss. Orn.* 6, *App.* p. 18, sp. 47. — *Lanarius cinereus*, *Briss. Orn.* 1, p. 365, sp. 17. *Id.* 8vo, p. 106. — *Lanarius albicans*, *Briss.* 1, p. 367, sp. 18. — *Subbuteo*, *Gessner, Ar.* p. 48. — *Pygargus accipiter*, *Ray, Syn.* p. 17, sp. 5. *Will. Orn.* p. 40, pl. 7. — *Falco plumbeus*, cauda tessellata, *Klein, Ar.* p. 52, sp. 22. — *Lanarius*, *Aldr. Orn.* 1, pl. 381, 382, adult male. — *Lanarius cinereus*, sive *Falco cinereo-albus*, *Frisch*, pl. 79, 80, adult male. — *Falco montanus secundus*, *Aldr. Will.* pl. 9, adult male. — *Albanella*, *Storia degli Ucc.* 1, pl. 35, adult male. — *Falco Pygargo*, *Id.* 1, pl. 31, female. — Autre Oiseau St Martin, *Belon, Hist. Ois.* p. 104. — L'Oiseau St Martin, *Buff. Ois.* 1, p. 212. *Id. Pl. enl.* 459, adult male. *Gerardin, Tabl. Elem. Orn.* 1, p. 43. — La Soubuse, *Buff. Ois.* 1, p. 215, pl. 9. *Id. Pl. enl.* 443, young female, 480, young male. *Gerardin, Tabl. Elem. Orn.* 1, p. 37, female and young. — Le Grenouillard, *Le Vaill. Ois. Afrique*, 1, p. 63, pl. 23, young. — Kore oder Halbweyhe, *Bechst.*

Tasch. Deutsch. p. 25, sp. 20. *Meyer and Wolf, Ois. d'Allem.* liv. 27, pl. 5, adult male, pl. 6, female. *Naumann, Vog. Deutsch.* ed. 2. 1, pl. 39, fig. 1, adult male; fig. 2. adult female, pl. 38; fig. 2, young male. — *Mause Habicht, Missilauche, Meyer, Boehm. Abh.* 6, p. 313, adult male. — *Blue Hawk, Edw.* 5, p. 33, pl. 225, adult male. — *Marsh Hawk, Edw.* p. 173, pl. 291. *Penn. Arct. Zool.* sp. 105. *Lath. Syn.* 1, p. 90, sp. 75, var. A. female and young. — *Ash-coloured mountain Falcon, Lath. Syn.* 1, p. 94, sp. 78, var. A. adolescent male. — *Hen-harrier, Edw.* pl. 225, very old male. *Will. (Angl.)* p. 172. *Alb.* 2, pl. 5. *Hayes, Brit. Birds,* pl. 1. *Lewin, Brit. Birds,* 1, p. 18. *Penn. Brit. Zool.* 1, sp. 58, p. 28. *Lath. Syn.* 1, p. 88, sp. 74. *Id. Suppl.* p. 22, adult male. — *Ring-tail Hawk, Edw.* 3, pl. 107. *Penn. Arct. Zool.* sp. 106, female and young. — *Ring-tail, Will. (Angl.)* p. 72. *Alb.* 3, pl. 3. *Hayes, Brit. Birds,* pl. 2. *Lewin, Brit. Birds,* 1, pl. 18, female. *Id.* pl. 2, fig. 4, the egg. *Penn. Brit. Zool.* sp. 59. *Lath. Syn.* 1, p. 89, sp. 75. *Id. Suppl.* p. 22, female and young. — *White-rumped Bay Falcon, Lath. Syn.* p. 54, sp. 34, var. B. young. — *Hudson's Bay Ring-tail, Lath. Syn.* 1, p. 91, sp. 76, young. — *White Lanner, Lath. Syn.* 1, p. 87, sp. 73, adult male. — *Gray Falcon, Penn. Brit. Zool.* 1, sp. 49. *Lewin, Brit. Birds,* 1, pl. 15. *Lath. Syn.* 1, p. 82, sp. 67, adolescent male. — *New York Falcon, Penn. Arct. Zool.* 2, p. 209, adolescent male. — *Ranivorous Falcon, Lath. Syn. Suppl.* female and young. — *White-necked Falcon, Lath. Syn. Suppl.* p. 30, sp. 101, adult male, South American. — *Cayenne Ring-tail, Lath. Syn.* 1, p. 91, sp. 76, var. A. young. — *Falco glaucus*, the sharp-winged hawk, of a pale sky blue colour, the tip of the wings black, *Bartr. Trav.* p. 290, adult male. — *Falco subcœruleus*, the sharp-winged hawk, of a dark or dusky blue colour, *Bartr. Trav.* p. 290, adolescent male. — *Falco ranivorus*, the Marsh Hawk, *Bartr. Trav.* p. 290, young. — *Philadelphia Museum.* — *My Collection.* — *Edinburgh College Museum.*

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BURROWING OWL.

STRIX CUNICULARIA, MOLINA.

BONAPARTE, Plate VII. Fig. 2. — *Strix cunicularia*, *Molina, Hist. Chili*, (Am. ed.) 1, p. 184. *Gmel. Syst.* 1, p. 292, sp. 28. *Lath. Ind.* p. 63, sp. 38. *Vieill. Ois. de l'Am. Sept.* 1, p. 48. *Say, in Long's Expedition to the Rocky Mountains*, 2, p. 36 and 200. — *Ulula cunicularia, Feuillee, Journ. Obs. Phys.* p. 562. — *Noctua coquimbana, Briss. Av.* 1, p. 525, sp. 11. — *Coquimbo Owl, Lath. Syn.* 1, p. 145, sp. 33. — *Philadelphia Museum*, No. 472.

V. — Page 39.

YOUNG YELLOW-BELLIED WOODPECKER.

PICUS VARIUS, BONAPARTE.

BONAPARTE, Plate VIII. Fig. 1, 2. — See *Wilson's American Ornithology*, 1, p. 147, pl. 9, Fig. 2, for the adult and history, (present edition, vol. 1, p. 157.) — *Picus varius*, *Linn. Syst.* 1, p. 176, sp. 20. *Gmel. Syst.* 1, p. 438, sp. 20. *Lath. Ind.* p. 232, sp. 21. *Vieill. Ois. de l'Am. Sept.* 2, p. 63, pl. 118, adult male; pl. 119, very young. — *Picus varius carolinensis*, *Brisson. Av.* 4, p. 62, sp. 24. — *Picus varius minor*, ventre luteo, the Yellow-bellied Woodpecker, *Catesby, Carolina*, 1, p. 21, pl. 21, left figure, adult male. — *Bartram, Trav.* p. 291. — Epeiche ou Pic varié de la Caroline, *Buff. Ois.* 7, p. 77. *Pl. enl.* 785, adult male. — Yellow-bellied Woodpecker, *Penn. Arct. Zool.* sp. 166. *Latham, Syn.* 1, p. 574, sp. 20. — *Philadelphia Museum*, No. 2004, adult male; No. 2005, adult female. — *My Collection*, young and variety. — Edinburgh College Museum.

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NORTHERN THREE-TOED WOODPECKER

PICUS TRIDACTYLUS, LINNÆUS.

BONAPARTE, Plate XIV. Fig. 2. — *Picus tridactylus*, *Linn. Syst.* 1, p. 177, sp. 21. *Gmel. Syst.* 1, p. 439, sp. 21. *Favn. Suec.* sp. 103. *Act. Holm.* 1740, p. 222. *Phil. Trans.* 62, p. 388. *Scop. Ann.* 1, sp. 56. *Georgi, Reise*, p. 165. *Borowsk, Nat.* 2, p. 138, sp. 8. *Lath. Ind.* p. 243, sp. 56. *Meyer and Wolf, Taschen. Deutsch. Vog.* 1, p. 125, sp. 8. *Temm. Man. Orn.* 1, p. 401, young. *Brehm, Lehr. Eur. Vog.* 1, p. 142. *Ranz. Elem. Orn.* 2, p. 184, sp. 9, tab. 7, fig. 4. — *Picus hirsutus*, *Vieill. Ois. Am. Sept.* 2, p. 68, pl. 124, adult male. — *Picoides*, *Lacepede* — *Dendrocopos tridactylus*, *Koch, Baerische Zool.* — *Tridactylus hirsutus*, *Stephens, in Shaw's Zool.* 9, p. 219. — *Picus tridactylus anomalus*, *Mus. Petr.* 368. — *Picchio a tre dita*, *Stor. degli Ucc.* 2, pl. 180. — *Pic tridactyle*, ou *Picoide*, *Temm.* l. c. — *Dreizehiger Specht*, *Bechst. Nat. Deutschl.* 2, p. 1044. *Naum. Vog. Nachtr.* pl. 41, fig. 81. *Meyer and Wolf, Ois. d'Allem. Cah.* 26, pl. 4, male; pl. 6, female. — Northern Three-toed Woodpecker, *Edwards*, pl. 114, male. — Three-toed Woodpecker, *Penn. Arct. Zool.* sp. 168. *Lath. Syn.* 2, p. 600, sp. 51, *Id. Suppl.* p. 112. — *Philadelphia Museum*, male. — *My Collection*, male, female, and young.

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YOUNG RED-HEADED WOODPECKER.

PICUS ERYTHROCEPHALUS, LINNÆUS.

BONAPARTE, Plate XIV. Fig. 3. — See *Wilson's American Ornithology*, vol. 1, p. 142, pl. 9, fig. 1, for the adult. — *Picus erythrocephalus*, *Linn. Syst.* 1, p. 174, sp. 7. *Mus. Adolph. Frid.* 2, p. 21. *Briss. Orn.* 4, p. 52, sp. 19, pl. 3, fig. 1. *Id.* 8vo, 2, p. 50. *Gmel. Syst.* 1, p. 429, sp. 7. *Borowsk. Nat.* 2, p. 136, sp. 4. *Lath. Ind.* p. 227, sp. 9, adult. *Vieill. Ois. Am. Sept.* 2, p. 63, pl. 112, adult; pl. 113, young. — *Picus obscurus*, *Gmel. Syst.* 1, p. 429. *Lath. Ind.* p. 228, sp. 11, young. — *Picus capite toto rubro*, the Red-headed Woodpecker, *Catesby, Car.* 4, pl. 20, adult. — *Picus capite colloque rubris*, *Klein, Av.* p. 28, sp. 12, adult. — *Picus capite toto rubro*, *Kalm, It.* 3, pl. 43, adult. — *Picchio di testa rossa*, *Storia degli Ucc.* pl. 170, adult. — *Pic noir à domino rouge*, *Buff. Ois.* 7, p. 55, adult. — *Pic de Virginie*, *Buff. Pl. enl.* 117, adult. — *Pic tricolor*, *Vieill. l. c.* adult and young. — Red-headed Woodpecker, *Penn. Arct. Zool.* sp. 160. *Kalm, Trav. (Angl.)* 2, p. 86. *Lath. Synop.* 2, p. 561, adult. — White-rumped Woodpecker, *Lath. Syn.* 2, p. 563, sp. 10, young.

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YELLOW-HEADED TROOPIAL.

ICTERUS ICTEROCEPHALUS, LINNÆUS.

BONAPARTE, Plate III. Fig. 1, male; Fig. 2, female. — *Oriolus Icterocephalus*, *Linn. Syst.* 1, p. 163, sp. 16. *Gmel. Syst.* 1, p. 392, sp. 16. *Lath. Ind.* p. 183, sp. 32, male. — *Icterus Icterocephalus*, *Daudin, Orn.* 2, p. 337, sp. 9, male. — *Pendulinus Icterocephalus*, *Vieill. Nouv. Dict. d'Hist. Nat.* 5, p. 317, male. — *Icterus Xanthornus Icterocephalus Cayanensis*, *Briss. Av.* 2, p. 124, sp. 27, pl. 12, fig. 4, male. — *Cornix atra*; capite, collo, pectoreque flavis, *Koelreuter, Nov. Comm. Ac. Sc. Petrop.* 11, p. 435, pl. 15, fig. 7, male. — *Les Coiffes jaunes*, *Buff. Ois.* 3, p. 250, male. — *Carouge de Cayenne*, *Buff. Pl. enl.* 341, male. — Yellow-headed Starling, *Edw. Glean.* 3, p. 241, pl. 323, male. — Yellow-headed Oriole, *Lath. Syn.* 1, part 2, p. 441, sp. 30, male. — *Phil. Museum*, No. 1528, male; No. 1529, female.

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GREAT CROW BLACKBIRD.

QUISCALUS MAJOR, VIEILLOT.

BONAPARTE, Plate IV. Fig. 1, male; Fig. 2, female. — *Quiscalus major*, *Vieill. Nouv. Dict. d'Hist. Nat.* 28, p. 487. — *Gracula quiscala*, *Ord, Journ. Acad. Nat. Sc. Philad.* 1, p. 253. —

Gracula barita, *Wilson, Am. Orn. 6, Index*, p. 8. — *Gracula quiscal*, the Purple Jackdaw of the sea coast, *Bartram, Travels*, p. 290. — *Corvus mexicanus*? *Gmel. Syst. 1*, p. 375, sp. 42. *Lath. Ind. p. 164*, sp. 36, male. — *Corvus zanoë*? *Gmel. Syst. 1*, p. 375, sp. 44. *Lath. Ind. p. 164*, sp. 37, female. — *Pica mexicana major*? *Briss. Av. 2*, p. 43, sp. 4, male. — *Pica mexicana minor*? *Briss. Av. 2*, p. 44, sp. 5, female. — *L'Hocitana*? *Buff. Ois. 3*, p. 103, male. — *Le Zanoë*? *Buff. Ois. 3*, p. 106, female. — Mexican Crow? *Lath. Syn. 1*, p. 396, sp. 34, male. — Lesser Mexican Crow? *Lath. Syn. 1*, p. 397, sp. 36, female. — *Hocitzanatli*, seu *magnus Sturnus*? *Hernand. Hist. An. Nov. Hisp. p. 21*, male. — *Tzanahoei*? *Hernand. Hist. An. Nov. Hist. p. 22*, female. — *Hoitzanatli*? *Ray, Syn. Av. p. 162*, male. — *Tzanahoei*, seu *Pica mexicana Hernandezii*? *Ray, Syn. Av. p. 162*, female. — *Philadelphia Museum*, No. 1582, male; No. 1583, female. — Edinburgh College Museum.

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FEMALE COMMON CROW BLACKBIRD

QUISCALUS VERSICOLOR, VIEILL.

BONAPARTE, Plate v. Fig. 1. — See *Wilson's American Ornithology*, 3, p. 44, pl. 21, fig. 4, for the male, and history. — *Quiscalus versicolor*, *Vieill. Nouv. Dict. d'Hist. Nat. 28*, p. 488. *Nobis, Obs. Nom. Wils. Orn. Journ. Acad. Nat. Sc. Philad. 3*, p. 365. — *Gracula quiscal*, *Linn. Syst. 1*, p. 165, sp. 7. *Gmel. Syst. 1*, p. 397, sp. 7. *Lath. Ind. p. 191*, sp. 7. — *Gracula barita*, *Gmel. Syst. 1*, p. 396, sp. 4. *Lath. Ind. p. 191*, sp. 6. *Ord, Journ. Acad. Nat. Sc. Philad. 1*, p. 254, (not of Linn.) — *Oriolus ludovicianus*, *Gmel. Syst. 1*, p. 387, sp. 31, (pied variety.) — *Oriolus leucocephalus*, *Lath. Ind. p. 175*, sp. 4, (pied variety.) — *Pica jamaicensis*, *Briss. Av. 2*, p. 41, sp. 3. — *Monedula purpurea*, the Purple Jackdaw, *Catesby, Carolina*, 1, p. 12, pl. 12. — *Gracula purpurea*, the Lesser Purple Jackdaw, or Crow Blackbird, *Bartram, Trav. p. 291*. — *Pie de la Jamaïque*, *Buffon, Ois. 3*, p. 97. — *Cassique de la Louisiane*, *Buff. Ois. 3*, p. 242. *Pl. enl. 646*, (pied variety.) — Purple Grackle, *Penn. Arct. Zool. sp. 153*. *Lath. Syn. 1*, part 2, p. 462, sp. 6. — Bout-tailed Grackle, *Penn. Arct. Zool. sp. 154*. *Lath. Syn. 1*, part 2, p. 460, sp. 5. — White-headed Oriole, *Penn. Arct. Zool. sp. 147*. *Lath. Syn. 1*, part 2, p. 422, sp. 4, (pied variety.) — *Philadelphia Museum*, No. 1578, male; No. 1579, female; No. 1602, whitish variety.

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STELLER'S JAY

GARRULUS STELLERI, LATHAM.

BONAPARTE, Plate XIII. Fig. 1. — *Corvus stelleri*, *Gmel. Syst. 1*, p. 370, sp. 27. *Lath. Ind. p. 158*, sp. 20. *Nob. Suppl.*

Syn. Birds U. S. sp. 63, *bis*, in *Zool. Journ. Lond.* 5, p. 2. *Id.* in *App. Gen. N. A. Birds in Ann. Lyc. N. Y.* p. 438. *Garrulus coronatus?* Swainson, *Syn. Birds Mex.* sp. 67, in *Phil. Mag. N. S.* 1, p. 437, old bird? — *Garrulus stelleri*, Vieill. *Nouv. Dict. d'Hist. Nat.* 12, p. 481. — Geai de Steller, Daud. *Orn.* 2, p. 248. — Steller's crow, *Penn. Arct. Zool.* sp. 139. *Lath. Syn.* 1, p. 387, sp. 21. *Id.* 2d *Suppl.* 8, p. 111, sp. 8. *Id. Gen. Hist.* 3, p. 56, sp. 58. — Collection of Mr Leadbeater, in London.

XII. — Page 67.

FLORIDA JAY.

GARRULUS FLORIDANUS, BONAPARTE.

BONAPARTE, Plate xiv. Fig. 1. — *Garrulus cyaneus*, Vieill. *Nouv. Dict. d'Hist. Nat.* 12, p. 476. — *Garrulus cœrulescens* Vieill. *Nouv. Dict. d'Hist. Nat.* 12, p. 480. — *Garrulus cœrulescens*, Ord, in *Jour. Ac. Nat. Sc. Phila.* 1, p. 346. — *Corvus floridanus*, Nob. *Syn. Am. Birds*, sp. 64, in *Ann. Lyc. N. Y.* *Id. Cat. Birds*, U. S. sp. 64, in *Contr. Macl. Lyc. Phil.* — *Corvus floridanus*, *Pica glandaria minor*, the little Jay of Florida, *Bart. Tr.* p. 290. — *Pica glandaria cœrulea non cristata*, *Bart. Trav.* p. 172. — Le Geay azurin, and Le Geay gris-bleu, Vieill. *Nouv. Dict. l. c* — *Philadelphia Museum*, No. 1378, male; 1379, female. — *My Collection*.

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BOHEMIAN WAXWING.

BOMBYCILLA GARRULA, VIEILL.

BONAPARTE, Plate xvi. Fig. 2. — *Ampelis garrulus*, Linn. *Syst.* 1, p. 297, sp. 1. *Gmel. Syst.* 1, p. 838, sp. 1. *Lath. Ind.* p. 363, sp. 1. *Muller*, p. 30. *Kram. El.* p. 363, sp. 1. *Borowsk. Nat.* 3, p. 171, sp. 68. *Meyer and Wolf, Tasch. Deutsch.* 1, p. 204. — *Lanius garrulus*, Faun. Suec. 2, sp. 82. *Scop. Ann.* 1, sp. 20. *Brunn.* sp. 25, 26. — *Bombyciphora poliocœlia*, *Meyer, Vog. Liv. and Esthl.* p. 104. — *Bombycivora garrula*, *Temm. Mun. Orn.* 1, p. 124. *Selby, Ill. Br. Orn.* 1, p. 87, pl. 34. — *Bombyciphora garrula*, *Brehm, Lehr. Eur. Vog.* 2, p. 980. *Bombycilla garrula*, Vieill. *Nouv. Dict. Nob. Suppl. Syn. Am. Birds in Zool. Journ.* London, 4, p. 3, sp. 65, *bis*. *Ranz. Elm. Orn.* 4, p. 136, sp. 1. — *Bombycilla bohémica*, *Steph. Contin. Shaw's Zool.* 10, p. 421. — *Garrulus bohemicus*, *Gesn. Ar.* p. 703. *Aldr. Orn.* 1, p. 796, pl. 798. *Muss.* p. 674, pl. 675. *Rui. Syn.* p. 85, A. *Will. Orn.* p. 90, pl. 20. *Alb. Av.* 2, p. 25, pl. 26. — *Turdus cristatus*, *Wirsing, Vog.* pl. 4. *Frisch*, pl. 32, fig. 1, male. *Klein. Stamm.* p. 11,

pl. 13, fig. 3, a-c. *Turdus Bombycilla bohemica*, *Briss. Orn.* 2, p. 323, sp. 63. *Id.* 8vo, 1, p. 250. — Garrulo di Boemia, *St. degli Ucc.* 2, pl. 160. — Le Jaseur, *Buff. Ois.* 3, p. 423, pl. 26. *Le Vaill. Ois. Para.* 1, p. 137, pl. 49. — Le Jaseur de Bohême, *Buff. Pl. enl.* 261. *Cuv. Règne Anim.* 1, p. 349. — Europäischer Seidenschwanz, *Bechst. Nat. Deutschl.* 3, p. 410, pl. 34, fig. 1. — Rothlichgraver Seidenschwanz, *Naum. Vog.* pl. 32, fig. 66. *Meyer and Wolf, Ois. d'Allem. Livr.* 22, pl. 6, fig. 1, male; fig. 2, female. — Silk tail, *Ray, Syn.* p. 85, *A. Phil. Trans.* 15, p. 1165, pl. 1, fig. 9. — Bohemian Chatterer, *Penn. Brit. Zool. sp.* 112, pl. 48. *Id.* fol. 7, pl. 1, C. *Lath. Syn.* 3, p. 91, sp. 1. *Übersetz.* 3, p. 86, sp. 1. *Bell, Travels.* 1, p. 98. *Flor. Scot.* 1, sp. 92. *Mont. Orn. Dict. Lewin. Brit. Birds.* 1, pl. 2. *Bewick, Br. Birds. Donovan, Br. Birds.* 1, pl. 11. *Pull. Cat. Dorsetsh.* p. 11. — *My Collection.*

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FULVOUS, OR CLIFF SWALLOW.

HIRUNDO FULVA, VIEILL.

BONAPARTE, Plate VII. Fig. 1. — *Hirundo fulva*, *Vieill. Ois. de l'Am. Sept.* 1, p. 62, pl. 32. *Stephens, Cont. of Shaw's Zool.* 10, part 1, p. 126. *Dewitt Clinton, Ann. Lyceum Nat. Hist. N. Y.* 1, p. 156. — *Hirundo lanifrons*, *Say, in Long's Exp. to the Rocky Mountains*, 2, p. 47. — *Phil. Mus.* No. 7624.

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FORK-TAILED FLYCATCHER.

MUSCICAPA SAVANA, VIEILLOT.

BONAPARTE, Plate I. Fig. 1. — *Muscicapa tyrannus*, *Linn. Syst.* 1, p. 325, sp. 4. *Gmel. Syst.* 1, p. 931, sp. 4. *Lath. Ind.* p. 484, sp. 69. — *Tyrannus savana*, *Vieill. Ois. de l'Am. Sept.* 1, p. 72, pl. 43, (a South American specimen.) *Vieill. Nouv. Dict. d'Hist. Nat.* 35, p. 87. — *Muscicapa tyrannus cauda bifurca*, *Briss. Av.* 2, p. 395, sp. 20, pl. 39, fig. 3. — Le Moucherolle savana, *Buff.* 4, p. 557, pl. 26. — Le Tyran à queue fourchue de Cayenne, *Buff. Pl. enl.* 571, fig. 2. — Fork-tailed Flycatcher, *Penn. Arct. Zool. sp.* 265. *Lath. Syn.* 2, part 1, p. 355, sp. 59. — *Phil. Museum*, No. 6620.

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SWALLOW-TAILED FLYCATCHER.

MUSCICAPA FORFICATA, LATHAM.

BONAPARTE, Plate II. Fig. 1. — *Muscicapa forficata*, *Gmel. Syst.* 1, p. 931, sp. 22. *Lath. Ind.* p. 485, sp. 70. *Vieill. Ois. de l'Am. Sept.* 1, p. 71. *Stephen's Cont. of Shaw's Zool.* 20, p. 413, pl. 3. — *Tyrannus forficatus*, *Say, in Long's Expedition to the Rocky Mountains*, 2, p. 224. — Moucherolle

à queue fourchue du Mexique, *Buff. Ois.* 4. p. 564. — Gobe mouche à queue fourchue du Mexique, *Buff. Pl. enl.* 677. — Swallow-tailed Flycatcher, *Lath. Syn.* 2, part 1, p. 356, sp. 60. — *Philadelphia Museum*, No. 6623.

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ARKANSAW FLYCATCHER.

MUSCICAPA VERTICALIS, BONAPARTE.

BONAPARTE, Plate II. Fig. 2. — *Tyrannus verticalis*, Say, in *Long's Expedition to the Rocky Mountains*, 2, p. 60. — *Philadelphia Museum*, No. 6624.

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SAY'S FLYCATCHER.

MUSCICAPA SAYA, BONAPARTE.

BONAPARTE, Plate II. Fig. 3. — *Phil. Museum*, No. 6831.

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PALLAS' DIPPER.

CINCLUS PALLASII, TEMMINCK.

BONAPARTE, Plate XVI. Fig. 1. — *Cinclus Pallasii*, Temm. *Man. Orn.* 1, p. 177. *Nob. Suppl. Gen. Am. birds*, sp. 94, bis, in *Zool. Journ. London*, 4, p. 4. *Id.* in *Ann. Lyc. New York*, 2, p. 438. — *Cinclus mexicanus*, Swainson, *Syn. Birds of Mexico*, sp. 27, in *Phil. Mag. New Series*, 1, p. 368. — Collection of Mr Leadbeater, in London.

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ROCKY MOUNTAIN ANTCATCHER.

MYIOTHERA OBSOLETA, BONAPARTE.

BONAPARTE, Plate I. Fig. 2. — *Troglodytes obsoleta*, Say, in *Long's Expedition to the Rocky Mountains*, vol. 2. p. 4. — *Philadelphia Museum*, No. 2420.

XXI. — Page 103.

FEMALE GOLDEN-WINGED WARBLER.

SYLVIA CHRYSOPTERA, LATHAM.

BONAPARTE, Plate I. Fig. 3. — See Wilson's *American Ornithology*, 2, p. 113, pl. 15, fig. 5, for the male. — *Motacilla chrysoptera*, Linn. *Syst.* 1, p. 333, sp. 20. *Gmel. Syst.* 1, p. 971, sp. 20, (male.) — *Sylvia chrysoptera*, Lath. *Ind.* p. 541, sp. 123. *Vieill. Ois. de l'Am. Sept.* 2, p. 37, pl. 97, (male.) — *Motacilla flavifrons*, Gmel. *Syst.* 1, p. 976, sp. 126, (male.) — *Sylvia flavifrons*, Lath. *Ind.* p. 527, sp. 69, (male.) — *Ficedula Pennsylvanica cinerea gutture nigro*, Brisson, *At.* suppl. p. 109,

sp. 80, (male.)—Figuier aux ailes dorées, *Buff. Ois.* 5, p. 311, (male.)—Golden-winged Flycatcher, *Edwards, Glean.* 2, p. 189, pl. 299, (male.)—Gold-winged Warbler, *Penn. Arct. Zool.* sp. 295. *Lath. Syn.* 2, part 2, p. 492, sp. 118, male.—Yellow-fronted Warbler, *Penn. Arct. Zool.* sp. 296. *Lath. Syn.* 2, part 2, p. 461, sp. 67, (male.)—Parus alis aureis, the Golden-winged Flycatcher, *Bartram, Trav.* p. 292. (male.)—*Philadelphia Museum*, No. 7010, male; No. 7011, female.

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FEMALE CAPE MAY WARBLER.

SYLVIA MARITIMA, BONAPARTE.

BONAPARTE, Plate III. Fig. 3. — See *Wilson's Amer. Orn.* v, p. 99, pl. 54, fig. 3, for the male. *My Collection.*

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ORANGE-CROWNED WARBLER

SYLVIA CELATA, BONAPARTE.

BONAPARTE, Plate v. Fig. 2. — *Sylvia celata*, *Say, in Long's Exp. to the Rocky Mountains*, 1, p. 169. — *Phil. Mus.* No. 7013.

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PALM WARBLER

SYLVIA PALMARUM, LATHAM.

BONAPARTE, Plate x. Fig. 2. — *Motacilla palmarum*, *Gmel. Syst.* 1, p. 951, sp. 53, winter dress. — *Sylvia palmarum*, *Lath. Ind.* p. 544, sp. 136. *Vieill. Ois. Am. Sept.* 2, p. 21, pl. 73. (and the other works of the same author,) winter plumage. *Nob. Add. Orn.* U. S. in *Jour. Ac. Ph.* 5, p. 29. *Id. Cat. birds* U. S. in *Contr. Mus. Lyc. Ph.* 1, p. 16, sp. 105. *Id. Syn. birds* U. S. sp. 105, in *Ann. Lyceum, N. Y.* 2, p. 78. — *Motacilla ruficapilla*, *Gmel. Syst.* 1, p. 971, sp. 106, summer dress. — *Sylvia ruficapilla*, *Lath. Ind.* summer dress, (not of *Vieill.*) — *Ficedula martinicana*, *Brisson. Av.* 3, p. 490, sp. 50, pl. 22, fig. 4, perfect plumage. — Le Bimbelé, ou fausse Linotte, *Buff. Ois.* 5, p. 330, winter dress. — Figuiers à tête rousse, *Buff. Ois.* 5, p. 306, summer dress. — Palm Warbler, *Lath. Syn.* 4, p. 489, sp. 131, winter dress. — Bloody-side Warbler, *Lath. Syn.* 4, p. 489, sp. 115, (not of *Penn.*) summer plumage. — *Philadelphia Museum.*

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FEMALE CÆRULEAN WARBLER.

SYLVIA AZUREA, STEPHENS.

BONAPARTE, Plate XI. Fig. 2. — See *Wilson's American Ornithology*, Cærulean Warbler, *Sylvia cærulea*, vol. 2, p. 141,

pl. 17, fig. 5, for the male. — *Sylvia azurea*, *Stephens, cont. Shaw's Zool.* 10, p. 653. *Nob. Obs. Jour. Ac. Nat. Sc. Ph.* 4, p. 193, male. — *Sylvia bifasciata*, *Say, in Long's Exp. to the Rocky Mountains*, 1, p. 170, male. — *Philadelphia Museum*, No. 7309, male; 7310, female.

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FEMALE GOLDEN-CROWNED GOLD-CREST

REGULUS CRISTATUS, RAY.

BONAPARTE, Plate II. Fig. 4. — See *Wilson's American Ornithology*, 1, p. 126, pl. 8, fig. 2, for the male. — *Motacilla regulus*, *Linn. Syst.* 1, p. 333, sp. 48. *Gmel. Syst.* 1, p. 995, sp. 48. — *Sylvia regulus*, *Lath. Ind.* p. 548, sp. 152. *Temm. Man. d'Orn.* p. 229. *Ranzani, Elem. di Zool.* 3, part 5, p. 105, pl. 16, fig. 3. — *Regulus cristatus*, *Ray, Syn.* p. 79, sp. 9. *Aldr. Orn.* 2, p. 649. *Will. Orn.* p. 163, pl. 42. *Vieill. Nour. Dict. d'Hist. Nat.* 29, p. 426. — *Regulus vulgaris*, *Stephens, Cont. of Shaw's Zool.* 20, p. 758, pl. 59. — *Parus calendula*, *Regulus cristatus* vulgo dicta, *Bris. Ar.* 3, p. 579, sp. 17. — *Le Routlet*, *Gerardin, Tabl. Elem. d'Orn.* 1, p. 318, sp. 26, pl. 15, (not of *Buff. Ois.* 5, p. 363, pl. 16, fig. 2, nor *Pl. enl.* 651, fig. 3, which represent *Sylvia ignicapilla* of *Brehm*.) — *Regolo*, *Storia degli uccelli*, 4, pl. 390. — *Gold-crowned Wren*, *Lath. Syn.* 2, part 2, p. 508, sp. 145. *Penn. Brit. Zool.* sp. 153. *Penn. Arct. Zool.* sp. 321. — *Golden-crowned Wren*, *Edw. Glean.* 5, p. 93, pl. 254, lower fig. male. — *Philadelphia Museum*, No. 7246, male; No. 7247, female.

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LAPLAND LONGSPUR

EMBERIZA LAPPONICA, WILSON.

BONAPARTE, Plate XIII. Fig. 1, male; Fig. 2, female. — *Fringilla lapponica*, *Linn. Syst.* 1, p. 317, sp. 1. *Faun. Suec.* sp. 235. *Gmel. Syst.* 1, p. 900, sp. 1. *Retz. Faun. Suec.* p. 242, sp. 119. *Forst. Ph. Tr.* 62, p. 404. *Fabr. Faun. Grand.* p. 119, sp. 8. *Lath. Ind.* p. 440, sp. 18. *Ubers.* 1, p. 289, sp. 18. — *Fringilla montana*, *Bris. Orn.* 3, p. 160, sp. 38. *Klein. Av.* p. 92, sp. 10. — *Fringilla calcarata*, *Pallas, It.* p. 710, sp. 20, t. E. *Id.* in 4to. French transl. 3, pl. 1. *Meyer and Wolf, Taschen. Deutschl.* 1, p. 176, sp. 13. — *Emberiza lapponica*, *Nilsson. Orn. Suec.* 1, p. 157, sp. 76. *Ranz. El. Zool.* 6, p. 24. — *Emberiza calcarata*, *Temm. Man. Orn.* 1, p. 322. *Brehm, Lehrb. Eur. Vog.* 1, p. 221. *Richardson App. to Parry's 2d Voy.* p. 345. — *Passerina lapponica*, *Vieill. Nour. Dict. Hist. Nat.* 25, p. 12. — *Plectrophanes calcaratus*, *Meyer, Taschen.* 3, p. 176, sp. 13. — *Plectrophanes lapponica*, *Selby in*

Trans. Linn. Soc. 15, p. 156, pl. 1, young. — *Montifringilla* congener, *Aldrov. Orn.* 2, p. 821, pl. 823. — *Le Grand Montain, Buff. Ois.* 4, p. 134. — *Le Pinson de Montagne, Gerardin, Tabl. Elem. d'Orn.* 1, p. 186. — *Lerchen Finck, Bechst. Naturg. Deutsch.* 3, p. 246, sp. 16. — *Naum. Nachtr.* 3, p. 23, pl. 20, ♀, female, pl. 40, male in autumn. — *Greater Brambling, Alb. 3,* p. 59, pl. 63. — *Lapland Finch, Penn. Arct. Zool.* 2, sp. 259. — *Lath. Syn.* 4, p. 268, sp. 14. — *Ubers.* 3, p. 256, sp. 14. — *My Collection.*

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LARK FINCH.

FRINGILLA GRAMMACA.

BONAPARTE, Plate v. Fig. 3. — *Fringilla grammaca, Say, in Long's Expedition,* 1, p. 139. — *Phil. Museum,* No. 6288.

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ARKANSAW SISKIN.

FRINGILLA PSALTRIA, SAY.

BONAPARTE, Plate vi. Fig. 3. — *Fringilla psaltria, Say, in Long's Expedition,* 2, p. 40. — *Phil. Museum,* No. 6278.

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FEMALE AMERICAN GOLDFINCH,

FRINGILLA TRISTIS, LINNÆUS.

BONAPARTE, Plate vi. Fig. 4. — See *Wilson's American Ornithology*, 1, p. 20, pl. 1, fig. 2, for the male, and history. — *Fringilla tristis, Linn. Syst.* 1, p. 320, sp. 12, male. — *Gmel. Syst.* 1, p. 907, sp. 12. — *Lath. Ind.* p. 452, sp. 64. — *Vieill. Nouv. Dict. d'Hist. Nat.* 12, p. 167. — *Fringilla spinus, var. γ. Gmel. Syst.* 1, p. 914, sp. 25, male, in winter plumage. — *Carduelis americana, Briss. Av.* 3, p. 64, sp. 3. — *Carduelis americanus, the American Goldfinch, Catesby, Carolina,* 1, p. 43, pl. 43, male in spring dress. — *Bartr. Trav.* p. 291. — *Chardonneret jaune, Buff. Ois.* 4, p. 212. — *Chardonneret du Canada, Buff. Pl. enl.* 202, fig. 2, male, in spring dress. — *Tarin de la Nouvelle York, Buff. Ois.* 4, p. 231. — *Pl. enl.* 292, fig. 1, male changing; fig. 2, male in winter dress. — *Golden Finch, Penn. Arct. Zool.* sp. 242. — *American Goldfinch, Edwards, Glean.* 2, p. 133, pl. 274, male and female. — *Lath. Syn.* 2, part 1, p. 288, sp. 57. — *Id. 1st Suppl.* p. 166. — *Siskin, var. B, Lath. Syn.* 2, part 1, p. 291, sp. 58, male changing. — *Philadelphia Museum,* No. 6344, male; No. 6345, female; No. 6346, Albino.

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LAZULI FINCH.

FRINGILLA AMENA, BONAPARTE.

BONAPARTE, Plate vi. Fig. 5. — *Emberiza amana*, Say, in *Long's Expedition to the Rocky Mountains*, 2, p. 47. — *Philadelphia Museum*, No. 5919.

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EVENING GROSBEEK.

FRINGILLA VESPERTINA, COOPER.

BONAPARTE, Plate xv. Fig. 1. — *Fringilla vespertina*, Cooper in *Ann. Lyc. New York*, 1, p. 220. *Nob. Cat. Birds*, U. S. sp. 188. in *Contr. Maccl. Lyc. Phila.* 1, p. 21. *Id. Syn. Birds*, U. S. sp. 188, in *Ann. Lyc. N. Y.* 2, p. 113. *Id. Suppl. in Zool. Journ. London*, 4, p. 2. — *Cabinet of the Lyceum of Nat. Hist. of New York*. — Mr Leadbeater's Collection in London.

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FEMALE ROSE-BREASTED GROSBEEK.

FRINGILLA LUDOVICIANA, BONAPARTE.

BONAPARTE, Plate xv. Fig. 2. — See *Rose-breasted Grosbeak*, *Loxia rosea*, (*ludoviciana*) Wils. *Am. Orn.* 2. p. 135, pl. 17, fig. 1, for the male. — *Loxia ludoviciana*, Linn. *Syst.* 1, p. 306, sp. 38. *Gmel. Syst.* 1, p. 862. sp. 38. *Lath. Ind.* p. 379, sp. 25. — *Fringilla punicea*, *Gmel. Syst.* 1, p. 921. sp. 81. — *Lath. Ind.* p. 444, sp. 34, adult male. — *Loxia maculata*, *Gmel. Syst.* 1, p. 861, sp. 87. *Lath. Ind.* p. 379, sp. 26, young. — *Loxia obscura*, *Gmel.* 1, p. 862, sp. 88. *Lath. Ind.* p. 379, sp. 27, female. — *Coccothraustes ludoviciana*, *Briss. Orn.* 3, p. 247, sp. 14. pl. 12, fig. 2. *Id.* 8vo. 1, p. 378. — *Coccothraustes rubricollis*, *Vieill. Gal. Ois.* 1, part 2, p. 67, pl. 58, (very bad,) and *Dict.* — *Pyrrhula ludoviciana*, *Sabine, Zool. App. to Frankl. Exp.* p. 675. — *Fringilla ludoviciana*, *Nob. Obs. Nom. Wils. Orn.* sp. 80. *Id. Cat. Birds*, U. S. sp. 189. *Id. Syn. Birds*, U. S. sp. 189. — *Guiraca ludoviciana*, *Swainson, Syn. Mex. Birds*, sp. 76, in *Phil. Mag. N. S.* 1, p. 438. — Le Rose-gorge, *Buff. Ois.* 3, p. 460. — Gros-bec de la Louisiane, *Buff. Pl. enl.* 153, fig. 2, male. — Moineau à poitrine et ventre pourprés, *Sonn. Buff.* 48, p. 240. — Red-breasted Grosbeak, *Penn. Art. Zool.* sp. 212. *Lath. Syn.* 3, p. 126, sp. 24. — Red-breasted Finch, *Penn. Arct. Zool.* sp. 275. *Lath. Syn.* 3, p. 272, sp. 30, adult male. Dusky Grosbeak, *Penn. Arct. Zool.* sp. 216. *Lath. Syn.* 3, p. 127, sp. 26, female. Spotted Grosbeak, *Penn. Arct. Zool.* sp. 213. *Lath. Syn.* 3, p. 126, sp. 25, young. *Philadelphia Museum*, No. 5806, male; 5807, female.

XXXIV. — Page 141.

FEMALE INDIGO FINCH.

FRINGILLA CYANEA, BONAPARTE.

BONAPARTE, Plate xv. Fig. 4. — See *Wilson's American Ornithology*, 1, p. 100, pl. 6, Fig. 5, for the male. — *Tanagra cyanea*, *Linn. Syst.* 1, p. 315, sp. 6, adult male in full plumage. — *Emberiza cyanea*, *Gmel. Syst.* 1, p. 876, sp. 54. *Lath. Ind.* p. 415, sp. 60. — *Emberiza cyanella*, *Sparm. Mus. Carls.* 2, pl. 42, 43. *Gmel. Syst.* 1, p. 887, sp. 74. — *Emberiza cœrulea*, *Gmel. Syst.* 1, p. 876. *Lath. Ind.* p. 415, sp. 59, male in moult. — *Tanagra cœrulea*? *Gmel. Syst.* 1, p. 891, sp. 27. *Lath. Ind.* p. 427, sp. 27, adult male. — *Tanagra carolinensis cœrulea*, *Briss. Av.* 3, p. 13, sp. 6, adult male in full dress. — *Emberiza canadensis cœrulea*, *Briss. Av.* 3, p. 298, sp. 12, pl. 14, fig. 2, male moulting. — *Passerina cyanea*, *Vieill. Nouv. Dict. Hist. Nat.* — *Fringilla cyanea*, *Nob. Obs.* sp. 112. *Id. Cat. and Synop. Birds U. S.* sp. 164. — *Linaria cyanea*, *Bartram, Trav.* p. 296. — *Linaria cœrulea*, the Blue Linnet, *Catesby, Carolina*, 1, p. 45, pl. 45. — *Le ministre*, *Buff. Ois.* 4, p. 86. — *L'azuroux*, *Buff. Ois.* 4, p. 369, male moulting. — *Passe-bleu*? *Buff. Ois.* 3, p. 495, adult male in full plumage. — *Moineau bleu de Cayenne*? *Buff. Pl. enl.* 203, fig. 2, adult male in full dress. — Blue Linnet, *Edwards, Av.* 4, p. 132, pl. 273, lower figure. — Indigo Bunting, *Penn. Arct. Zool.* 2, sp. 235. *Lath. Syn.* 4, p. 205, sp. 53. — Blue Bunting, *Penn. Arct. Zool.* 2, sp. 234. *Latham, Syn.* 3, p. 205, sp. 52, male moulting. — Blue Tanager? *Lath. Syn.* 3, p. 234, sp. 28. — *Philadelphia Museum*, No. 6002, male; 6003, female.

XXXV. — Page 145.

CRIMSON-NECKED BULLFINCH

PYRRHULA FRONTALIS, BONAPARTE.

BONAPARTE, Plate vi. Fig. 1, male; Fig. 2, female. — *Fringilla frontalis*, *Say, in Long's Expedition to the Rocky Mountains*, 2, p. 40. — *Philadelphia Museum*, No. 6276, male; No. 6277, female.

XXXVI. — Page 149.

FEMALE PINE BULLFINCH

PYRRHULA ENUCLEATOR.

BONAPARTE, Plate xvi. Fig. III. — See *Wilson's American Ornithology*, Pine Grosbeak, *Loxia enucleator*, vol. 1, p. 60, pl. 5, fig. 2, for the male at the age of one year. — *Loxia enucleator*, *Linn. Syst.* 1, p. 299, sp. 3. *Faun. Suec.* sp. 223.

Schæn. Act. Holm. 1757, p. 139. *Gmel. Syst.* 1, p. 845, sp. 3. *Brunn.* sp. 239. *Müller,* sp. 246. *Borowsk. Nat.* 3, p. 133, sp. 3. *Lath. Ind.* 1, p. 372, sp. 5. *Retz. Faun. Suec.* p. 234, sp. 211. *Meyer and Wolf, Taschenb. Vog. Deutschl.* 1, p. 142. — *Loxia flamengo, Mus. Carls.* 1, pl. 17. *Gmel. Syst.* 1, p. 864, accid. var. — *Loxia pyrrhula,* var. δ . *Lath. Ind.* 1, p. 388, sp. 56, accid. var. — *Coccothraustes canadensis, Briss. Orn.* 3, p. 250, sp. 15, pl. 12, fig. 3. *Id.* 8vo, 1, p. 378. — *Pyrrhula enucleator, Temm. Man. Orn.* 1, p. 383. *Sabine, Zool. App. to Frank. Exp.* p. 675. *Brehm. Lehr. Eur. Vog.* 1, p. 169. *Ranz. Elem. Orn.* 6, p. 70, sp. 2. *Selby, Ill. Brit. Orn.* 1, p. 256, pl. 53, fig. 1, male, fig. 2, female. *Nob. Obs. Wils. Nom. Cat. and Syn. Birds U. S.* sp. 193. — *Corythus enucleator, Cur. Règn. Anim.* 1, p. 392. — *Strobilophaga enucleator, Vieill. Gal. Ois.* i, pl. 53, young male. — *Fringilla enucleator, Meyer, Syst. Taschenb.* 3, p. 250, sp. 2. — *Ciufolotto snocciolatore, Ranz. loc. cit.* — *Dur-bee, Buff. Ois.* 3, p. 457. *Gros-bec du Canada, Id. Pl. enl.* 135, fig. 1, male a year old. — *Haken Keinbeisser, Bechst. Nat. Deutsch.* 3, p. 28. *Naum. Vog. Nachtr.* pl. 19, fig. 36, male, fig. 37, female. — *Der Fichten Keinbeisser, Meyer and Wolf, Vog. Deutschl.* 12, pl. 5, fig. 1, young male, fig. 2, old female. — *Greatest Bullfinch, Edwards,* pl. 123, young male, pl. 24, adult female. — *Pine Grosbeak, Penn. Brit. Zool.* sp. 114, pl. 49, fig. 2. *Arct. Zool.* 2, sp. 209. *Ellis, Narr.* 2, p. 15. *Lewin, Brit. Birds,* 2, pl. 68. *Lath. Syn.* 2, p. 111, sp. 5. *Id. Supp.* p. 148. *Mont. Orn. Dict.* 1. *Walch. Syn.* pl. 207. *Donov. Brit. Birds,* 1, pl. 17. *Bewick, Brit. Birds,* 1, p. 135. *Shaw's Zool.* 9, p. 238, pl. 43. *Übers.* 2, p. 106, sp. 5. — *Flamingo Grosbeak, Lath. Syn. Suppl.* p. 155, accid. var. — *My Collection,* male, female, and young. — *Edinburgh College Museum.*

XXXVII. — Page 151.

FEMALE WHITE-WINGED CROSSBILL.

LOXIA LEUCOPTERA.

BONAPARTE, Plate xv. Fig. 3. — See *Wilson's American Ornithology*, 4, p. 48, pl. 41, for the young male. — *Loxia leucoptera, Gmel. Syst.* 1, p. 844, sp. 12. *Vieill. Gal. Ois.* 1, p. 56, pl. 52, young male. *Nob. Obs.* sp. 84. *Id. Cat. and Syn. Birds U. S.* sp. 195. — *Loxia falcirostra, Lath. Ind.* p. 371, sp. 2. — *Le Bec-croisé leucoptère, Sonn. Buff.* 47, p. 65. *Vieill. Nouv. Dict. Hist. Nat.* 2d ed. 3, p. 339. — *White-winged Crossbill, Lath. Syn.* 3, p. 108, sp. 2. *Id. Suppl.* p. 148. *Dixon, Voy.* t. 20, p. 358, female. *Penn. Arct. Zool.* 2, sp. 208. — *My Collection,* male, female, young, and middle aged.

XXXVIII. — Page 156.

BAND-TAILED PIGEON.

COLUMBA FASCIATA, SAY.

BONAPARTE, Plate VIII. FIG. 3. — *Columba fasciata*, Say, in *Long's Expedition to the Rocky Mountains*, 2, p. 10. *Philadelphia Museum*, No. 4938.

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WHITE-CROWNED PIGEON.

COLUMBA LEUCOCEPHALA, LINNÆUS.

BONAPARTE, Plate XVII. FIG. 1. — *Columba leucocephala*, Linn. *Syst.* 1. p. 281, sp. 14. *Gmel. Syst.* 1, p. 772, sp. 14. *Lath. Ind.* p. 594, sp. 5. *Temm. Ind. Col. in Hist. Pig. et Gall.* 1, p. 459. *Vieill. Gal. Ois.* 2, p. 331, pl. 194. *Columba minor leucocoryphas*, *Raii Syn.* p. 63, sp. 16, and p. 184, sp. 24. *Klein, Av.* p. 120, sp. 18. *Columba saxatilis jamaicensis*, *Brisson.* *Orn.* 1, p. 137, sp. 33. *Id.* 8vo. 1, p. 34. *Columba capite albo*, The White crowned Pigeon, *Catesby, Car.* 1, p. 25, pl. 25. *Seligman, Suml. Selt. Vog.* 2, col. plate. Le Pigeon de roche de la Jamaïque, *Buff. Ois.* 2, p. 529. *Sonn. Buff.* 7, p. 216. *Colombe à calotte blanche*, *Temm. Hist. Pig. et Gall.* 1, p. 204. *Id.* folio, pl. 13 of the second family. *My Collection.* Edinburgh College Museum.

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ZENAIDA PIGEON.

COLUMBA ZENAIDA, BONAPARTE.

BONAPARTE, Plate XVII. FIG. 2. — *Columba zenaida*, *Nob. Add. Orn.* U. S. in *Journ. Acad. Phil. Id. Cat. Birds*, U. S. sp. 198, in *Contr. Maccl. Lyc. Ph.* 1, p. 22. *Id. Syn. Birds*, U. S. sp. 198, in *Ann. Lyc. Nat. Hist.* N. Y. 2, p. 119. *Id. Suppl. in Zool. Journ. Lond.* 5, p. 6. *My Collection.*

XLI. — Page 163.

WILD TURKEY.

MELEAGRIS GALLOPAVO, LINNÆUS.

BONAPARTE, Plate IX. male and female. — *Meleagris gallopavo*, Linn. *Syst.* 1, p. 268, sp. 1. *Gmel. Syst.* 1, p. 732, sp. 1. *Lath. Ind.* p. 618, sp. 1. *Temm. Hist. Nat. des Pig. et Gall. Index*, 3, p. 676. *Wilson Am. Orn.* 6, Index, p. xvii. *Stephens, Cont. of Shaw's Zool.* 11, Part 1, p. 156, pl. 8. *Ranzani, Elem. di Zool.* 3, Part 1, p. 154. *Meleagris sylvestris*, *Vieill. Nouv. Dict. d'Hist. Nat.* 9, p. 447. *Gallopavo*, *Aldrovandi, Orn.* 2, p. 35, fig. on p. 39, domestic variety, male; fig. on p. 40.

Id. female. *Willughby, Orn.* p. 118, pl. 27, fig. 4, dom. var. male. *Johnston, Theatrum Universale de Avibus*, p. 55, pl. 24, fig. 1, dom. var. male; fig. 2, *Id.* female. *Brisson, Av.* 1, p. 158, pl. 16, dom. var. male. *Gallus indicus*, Welscher Han, *Johnston, Th. Av.* p. 83, pl. 29, fig. 1, dom. var. male. *Gallopavo sylvestris* Novæ-Angliæ, a New England Wild Turkey, *Ray, Syn.* p. 51, sp. 3. *Gallopavo sylvestris*, *Catesby, Carolina*, 1, *App.* p. xlv. *Meleagris americanus*, the Wild Turkey, *Bartr. Trav.* p. 290. Gallo Pavo, Gallo Pavone volgarmente Pollo d'India; *Storia degli Uccelli*, 2, pl. 222, dom. crested var. male; pl. 223, dom. white, black-spotted var. young; pl. 224, dom. white yellowish-spotted var. young; pl. 225, dom. black, var. young; pl. 226, dom. black, white-spotted var. young. — *Coc d'Inde*, *Belon Histoire de la Nature des Oiseaux*, p. 248, with fig. dom. var. male. *Dindon, Buff. Ois.* 2, p. 132, pl. 3. *Pl. enl.* 97, dom. whitish, var. male. *Temm. Hist. Nat. des Pig. et Gall.* 2, p. 374. *Gerardin, Tabl. Elem. d'Orn.* 2, p. 103, pl. 21, fig. 2, dom. var. male. *Turkie, Josselyn Voyages to New England*, p. 99. *New England's Rarities*, p. 8. Wild Turkey, *Clayton, Virginia, Phil. Trans.* 17, p. 992. *Id. Abridg.* 3, p. 590. *Lawson, Carolina*, p. 149. *Penn. Phil. Trans.* 71, p. 67. *Arct. Zool.* sp. 178. American Turkey, *Lath. Syn.* 2, Part 2, p. 676, sp. 1 Domestic Turkey, *Penn. Brit. Zool.* 1, sp. 97.

XLII. — Page 169.

DUSKY GROUSE.

TETRAO OBSCURUS, SAY.

BONAPARTE, Plate XVIII. female. — *Tetrao obscurus*, *Say*, in *Long's Exped. to Rocky Mount.* 2, p. 14. *Nob. Cat. Birds* U. S. sp. 209, in *Contr. Maccl. Lyc. Phila.* 1, p. 23. *Id. Syn. Birds* U. S. sp. 207. in *Ann. Lyc. Nat. Hist.* N. Y. pp. 127, 442. — *Philadelphia Museum*, female. — *Collection of Mr Sabine*, in *London*, male and female.

XLIII. — Page 198.

SHARP-TAILED GROUSE.

TETRAO PHASIANELLUS, LINNÆUS.

BONAPARTE, Plate XIX. — *Tetrao phasianellus*, *Linn. Syst.* ed. 10, p. 160. *Gmel. Syst.* 1, p. 747. *Forst. Phil. Trans.* 62, pp. 394 and 425. *Lath. Ind. Orn.* p. 635, sp. 2. *Brisson. Suppl.* p. 9. *Temm. Ind. Gall. in Hist. Pig. and Gall.* 3, p. 702. *Vieill. Nouv. Dict. Hist. Nat. Sabine, Zool. App. to Frankl. Exped.* p. 681. *Nob. Cat. Birds* U. S. sp. 203. *Id. Syn. Birds U. S.* sp. 200. — *Tetrao urogallus*, var. β , *Linn. Syst.* 1, p. 273, sp. 1. — *Gelinotte à longue queue*, *Buff. Ois.* 2, p. 286. *Sonn. Buff.* 6, p. 72. *Bonap. Tabl. Encyc. Orn.*

p. 196, pl. 91, fig. 1.—Francolin à longue queue, *Hearne, Voy. à l'Océan du Nord*, (Fl. transl.) p. 336.—Tetras phasianelle, *Temm. Pig. et Gall.* 3, p. 152.—Long-tailed Grouse, *Edwards, Glean.* pl. 117. *Lath. Syn.* 4, p. 732. *Id. Suppl.* p. 21.—Sharp-tailed Grouse, *Penn. Arct. Zool.* sp. 181.—The Grouse, or Prairie Hen, *Lewis and Clark, Exp.* 2, p. 180, sp. 1.—*Philadelphia Museum*, female.—*My Collection*, male and female.—Edinburgh College Museum.

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SPOTTED GROUSE

TETRAO CANADENSIS.

BONAPARTE, Plate xx. male; Plate xxi. Fig. 1. female.—*Tetrao canadensis*, *Linn. Syst.* 1, p. 274, sp. 3. *Gmel. Syst.* 1, p. 749, sp. 3. *Lath. Ind.* p. 637, sp. 6. *Forster, in Phil. Tr.* 62, p. 389. *Temm. Ind. Gall. in Hist. Pig. et Gall.* 3, p. 702. *Vieill. Nouv. Dict. Hist. Nat. Sabine, Zool. App. Frankl. Exp.* p. 683. *Nob. Cat. Birds U. S.* sp. 207. *Id. Syn. Birds U. S.* sp. 208.—*Tetrao canace*, *Linn. Syst.* 1, p. 25, sp. 7, female.—*Lagopus Bonasa Freti Hudsonis*, *Briss. Orn.* 1, p. 201, sp. 6. *Id. Suppl.* p. 10. *Id.* 8vo, 4, p. 56, male.—*Lagopus Bonasa canadensis*, *Briss. Orn.* 1, p. 203, sp. 7, pl. 20, fig. 2. *Id.* 8vo, 4, p. 57, female.—*Lagopus Freti Hudsonis*, *Klein, Av.* p. 117, sp. 6.—La Gelinotte du Canada, *Buff. Ois.* 2, p. 279. *Id. Pl. enl.* 131, male, 132, female. *Sonn. Buff.* 6, p. 58. *Bonat. Tabl. Enc. Orn.* p. 197, pl. 91, fig. 2.—*Tetras tacheté*, ou Acaho, *Temm. Pig. et Gall.* 3, p. 160, bis.—Black and Spotted Heathcock, *Edw. Glean.* p. 118, pl. 118, male.—Brown and Spotted Heathcock, *Edw. Glean.* p. 71, pl. 71, female. *Ellis, Hudson Bay*, 1, t. p. 50.—Spotted Grouse, *Penn. Arct. Zool.* sp. 182. *Lath. Syn.* 4, p. 735, sp. 6. *Id. Suppl.* p. 214, accid. var.—The small speckled Pheasant, *Lewis and Clark, Exp.* 2, p. 182, male.—The small brown Pheasant, *Id. Id. Exp.* 2, p. 182, female.—*Philadelphia Museum*, male.—*My Collection*, male and female.—Edinburgh College Museum.

XLV.—Page 212.

COCK OF THE PLAINS

TETRAO UROPHASIANUS, BONAPARTE.

BONAPARTE, Plate xvi. Fig. 2.—*Tetrao urophasianus*, *Nob. in Zool. Journ. Lond. Id. App. to Syn. Birds U. S.* p. 442. *in Ann. Lyceum Nat. Hist. New York*.—The Cock of the Plains, *Lewis and Clark, Exp.* 2, p. 180, sp. 2.—Mr Leadbeater's Collection in London, female.

APPENDIX.

ADDITIONAL DETAILS IN REGARD TO THE BIRDS
OF AMERICA, AND BIRDS IN GENERAL; BY
AUDUBON, RICHARDSON, AND SWAINSON.

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APPENDIX.

THE BIRDS OF AMERICA.

BY JOHN JAMES AUDUBON, F R S L & E F L S M W S &c

A WELL known author remarks, when speaking of this naturalist of the woods and wilds, — “ Devotedly attached to the study of nature, no less than to painting, he seems to have pursued both with a genius and an ardour, of which, in their united effects, there is no parallel. His ornithological narratives in the *Edinburgh Philosophical Journal* are as valuable to the scientific world, as they are delightful to the general reader. There is a freshness and an originality about these essays, which can only be compared to the animated biographies of Wilson. Both these men contemplated nature as she really is, not as she is often represented in books: they sought her in her sanctuaries. The shore, the mountains, and the forest, were alternately their study, and there they drank the pure stream of knowledge at its fountainhead. The observations of such men are the corner stones of every attempt to discover the system of nature. Their writings will be consulted when our favourite theories shall have passed away. Ardent, therefore, do we hope, that M. Audubon will alternately become the historian and the painter of his favourite objects; that he will never be made a convert to any system; but instruct and delight us in a true and unprejudiced biography of nature.” Audubon, like Wilson, is a self-taught naturalist, and, like him, has

produced a work—his *Ornithological Biography*—distinguished by beauty of style, and perspicuity of narrative. It is descriptive of the plates in the unrivalled work entitled *The Birds of America*. We say unrivalled, because few naturalists and artists have appeared who could represent accurately the external forms, attitudes, form and style of distribution of the plumage of birds, and scarcely any one, except Audubon, has succeeded in presenting, to the eye and imagination, the passions and feelings of these interesting beings. Wilson, although a fascinating writer, and an accurate observer of the habits and manners of the feathered creation, cannot be considered as an effective ornithological painter.

In order that the volumes of the *Miscellany* on the *Birds of America*, may be as complete as circumstances will allow of, we shall now lay before our readers a systematic catalogue of the birds drawn and described by Audubon; also, some notices of the new species he has discovered, and a few interesting details from his *Ornithological Biography*:—

Systematic Catalogue of the American Birds, drawn and described by Audubon.

1 Bird of Washington,	Falco washingtoni Aud
2 White-headed Eagle,	Falco leucocephalus Linn
3 Great-footed Hawk,	Falco peregrinus Gmel
4 Stanley Hawk,	Falco stanleyi Aud
5 Red-tailed Hawk,	Falco borealis Gmel
6 Red-shouldered Hawk,	Falco hyemalis Gmel
7 Winter Hawk,	Falco hyemalis Gmel
8 Swallow-tailed Hawk,	Falco furcatus Linn
9 Le Petit Caporal,	Falco temerarius Aud.
10 Fish Hawk,	Falco haliastur Linn.
11 Black Warrior,	Falco harlani Aud.
12 Broad-winged Hawk,	Falco pennsylvanicus Lath.
13 Pigeon Hawk,	Falco columbarius Linn.
14 Great Horned Owl,	Strix virginiana Gmel.
15 Barred Owl,	Strix nebulosa Gmel
16 Mottled Owl,	Strix asio Linn
17 Carolina Parrot,	Psittacus carolinensis Linn
18 Yellow-billed Cuckoo,	Coccyzus americanus Bonap
19 Black-billed Cuckoo,	Coccyzus erythrophthalmus Bon
20 Red-headed Woodpecker,	Picus erythrocephalus Linn.
21 Gold-winged Woodpecker,	Picus auratus Linn
22 Ivory-billed Woodpecker,	Picus principalis Linn.
23 Belted Kingfisher,	Alcedo alcyon Linn
24 Baltimore Oriole,	Icterus baltimore Daud.
25 Orchard Oriole,	Icterus spurius Bonap.

26. Rice Bunting,
 27. Red-winged Starling,
 28. Cow Bunting,
 29. Purple Grackle,
 30. Florida Jay,
 31. Columbian Jay,
 32. Cedar Bud,
 33. Chuckwill's Widow,
 34. Whip-poor-Will,
 35. White-bellied Swallow,
 36. Republican Cliff Swallow,
 37. Purple Martin,
 38. Bonaparte Flycatcher,
 39. Selby's Flycatcher,
 40. American Redstart,
 41. Tyrant Flycatcher,
 42. Solitary Flycatcher,
 43. White-eyed Flycatcher,
 44. Loggerhead Shrike,
 45. Louisiana Water Thrush,
 46. Mocking Bird,
 47. Hermit Thrush,
 48. Wood Thrush,
 49. Prothonotary Warbler,
 50. Prairie Warbler,
 51. Blue Yellow back Warbler,
 52. Blue-winged Yellow Warbler,
 53. Maryland Yellow-throat,
 54. Roscoe's Warbler,
 55. Vigors' Warbler,
 56. Worm-eating Warbler,
 57. Children's Warbler,
 58. Trail's Flycatcher,
 59. Kentucky Warbler,
 60. Azure Warbler,
 61. Blue-green Warbler,
 62. Black-and-yellow Warbler,
 63. Chestnut-sided Warbler,
 64. Carbonated Warbler,
 65. Rathbone's Warbler,
 66. Bay-breasted Warbler,
 67. Cerulean Flycatcher,
 68. Yellow-throated Warbler,
 69. Autumnal Warbler,
 70. Nashville Warbler,
 71. Blue-eyed Warbler,
 72. Brown Lark,
 73. Prairie Titlark,
 74. Bewick's Wren,
 75. Cuvier's Wren,
 76. Great Carolina Wren,
 77. House Wren,
 78. Marsh Wren,
 79. Black-and-white Creeper,
 80. Ruby-throated Humming Bird,
 81. Crested Titmouse,
 82. Henslow's Bunting,
 83. Summer Red Bird,
 84. Purple Finch,
 85. White-throated Sparrow,
- Icterus agripennis* Bonap.
Icterus phœniceus David
Icterus peioris Bonap.
Quiscalus versicolor Vieill.
Corvus floridanus Bart.
Garrulus ultramarinus Bonap.
Bombicilla carolinensis Bosc.
Caprimulgus carolinensis Gmel.
Caprimulgus vociferus Wils.
Hirundo bicolor Vieill.
Hirundo fulva Vieill.
Hirundo purpurea Linn.
Muscicapa bonapartei Aud.
Muscicapa selbyi Aud.
Muscicapa ruficilla Linn.
Muscicapa tyrannus Bosc.
Vireo solitarius Vieill.
Vireo noveboracensis Bonap.
Lanius ludovicianus Linn.
Turdus ludovicianus Aud.
Turdus polyglottus Linn.
Turdus minor Gmel.
Turdus mustelinus Gmel.
Sylvia protonotarius Lath.
Sylvia discolor Vieill.
Sylvia americana Lath.
Sylvia solitaria Wils.
Sylvia trichas Lath.
Sylvia roscœ Aud.
Sylvia vigorsii Aud.
Sylvia vermivora Lath.
Sylvia childreni Aud.
Sylvia traili Aud.
Sylvia formosa Wils.
Sylvia azurea Steph.
Sylvia tigrina Lath.
Sylvia maculosa Lath.
Sylvia icterocephala Lath.
Sylvia carbonata Aud.
Sylvia rathboni Aud.
Sylvia castanea Wils.
Sylvia œnula Lath.
Sylvia pensilis Lath.
Sylvia autumnalis Wils.
Sylvia rubrocapilla Wils.
Sylvia æstiva Lath.
Anthus spinoletta Bonap.
Anthus pipiens Aud.
Troglodytes bewicki Aud.
Troglodytes cuvieri Aud.
Troglodytes ludovicianus Bonap.
Troglodytes adoni Vieill.
Troglodytes palustris Bonap.
Certhia varia Aud.
Trochilus colubris Linn.
Parus bicolor Linn.
Emberiza henslowi Aud.
Tanagra æstiva Gmel.
Fringilla purpurea Gmel.
Fringilla pennsylvanica Lath.

86 Snow Bird,	<i>Fringilla hyemalis</i> Linn.
87 Song Sparrow,	<i>Fringilla melodia</i> Wils.
88 Towhee Bunting,	<i>Fringilla erythrophthalma</i> Linn.
89 American Goldfinch,	<i>Fringilla tristis</i> Linn.
90 Painted Bunting,	<i>Fringilla ciris</i> Temm.
91 Swamp Sparrow,	<i>Fringilla palustris</i> Wils.
92 Indigo Bird,	<i>Fringilla cyanea</i> Wils.
93 Sea-side Finch,	<i>Fringilla maritima</i> Wils.
94 Bay-winged Bunting,	<i>Fringilla graminea</i> Gmel.
95 Carolina Turtle Dove,	<i>Columba carolinensis</i> Linn.
96 Passenger Pigeon,	<i>Columba migratoria</i> Linn.
97 The Wild Turkey Male,	<i>Meleagris gallopavo</i> Linn.
98 Wild Turkey Female,	<i>Meleagris gallopavo</i> Linn.
99 Virginian Partridge,	<i>Perdix virginiana</i> Lath.
100 Ruffed Grouse,	<i>Tetrao umbellus</i> Linn.

NORTHERN ZOOLOGY. (BIRDS.)

BY JOHN RICHARDSON, M D F R S &c AND
W SWAINSON, ESQ F R S &c

THROUGH the goodness of the distinguished authors, we have been favoured with a sight of the proof sheets of the descriptive part of this important work, at present in the press. Its scientific details and views are learned and accurate; the natural history of the species interesting, and the popular illustrations amusing and instructive. The extracts which we shall make may bring forcibly to the recollection of many of our readers the admirable sketches in the *Journey to the Polar Sea*.

Catalogue of the New Species of American Birds, described by Richardson and Swainson in the "Northern Zoology."

1. Arctic, or White Horned Owl *Strix Arctiens* — Swainson
This beautiful owl is white, marked on the dorsal aspect with crowded transverse brown lines, the base of the plumage ferruginous, the ventral aspect unspotted. It is two feet long, was seen at Carlton House by Dr Richardson.
2. American Gray Shrike. *Lanius excubitorides* — Carlton House
3. White-winged Shrike *Lanius elegans* — Hudson's Bay
4. Northern Tyrant *Tyrannus borealis* — Banks of the Saskatchewan
5. Little Tyrant Flycatcher *Tyrannula pusilla* — Carlton House.
6. Short-legged Pewit. *Tyrannula richardsoni* — Cumberland House
7. American Dipper · Pallas' Dipper of Bonaparte. *Cinclus americanus* — Athabasca River
8. Little Tawny Thrush *Merula minor*. — Banks of the Saskatchewan.

9. Hermit Thrush *Merula solitaria*. — Lake Huron
- 10 Thrush-like Mock-bird. *Orpheus meruloides* — Nootka Sound.
- 11 The Arctic Blue-bird *Cythaea Arctica* — Great Bear Lake
- 12 Bartram's Greenlet *Vireo Bartramii* — Banks of the Columbia.
- 13 Painted Bunting *Emberiza Picta* — Carlton House
- 14 Clay-coloured Bunting *Emberiza Pallida* — Carlton House
- 15 Arctic Ground-finch *Pyrgita Arctica* — Carlton House
- 16 Gray-coloured Linnets *Linaria Tephrocotis*. — On the Saskatchewan.
- 17 Short-billed Jay *Garrulus Brachyrhynchus* — Port Franklin
- 18 Red-shafted Woodpecker *Colaptes Mexicanus* — Banks of the Columbia
- 19 Cinnamon, or Nootka Humming Bird *Trochilus Rufus*
This superb species, found by Captain Cook in Nootka Sound, and since in Real del Monte, in Mexico — Edinburgh College Museum
- 20 White-tailed Grouse *Tetrao Lencurus* — Rocky Mountains
- 21 Drummond's Snipe *Scelopax Drummondii* — Rocky Mountains
- 22 Ring-billed Mew Gull *Larus zonorhynchus* — Banks of the Saskatchewan
- 23 Short-billed Mew Gull *Larus Brachyrhynchus* — Great Bear Lake.
- 24 Franklin's Rosey Gull *Larus Franklinii* — On the Saskatchewan
- 25 Bonaparte's Gull *Larus Bonapartei* — On Great Slave Lake
- 26 Cuneate-tailed Gull *Larus Rosu*
This beautiful species was first discovered and described by Dr Richardson. A description of this bird, by my former assistant, which was never written, is referred to by a late author
- 27 Richardson's Jaeger *Lestris Richardsonii* — Port Franklin
- 28 Rocky Mountain Gariot *Clangula Barrovi* — On the Rocky Mountains
- 29 Trumpeter Swan *Cygnus Bueanator* — Hudson's Bay
- 30 Hutchin's Barnacle *Anas Hutchinsii* — Melville Peninsula — Edinburgh College Museum
- 31 Double-crested Cormorant. *Pelicanus Dilophus*

ORDER I. — *ACCIPITRES*.GENUS I — *VULTUR*

1 *V. LEPIDURA*. — TURKEY VULTURE, OR, TURKEY BUZZARD.

Observations on the supposed power which Vultures, such as the Turkey Vulture, are said to possess, of scenting carrion at great distances.

It has always appeared to us unaccountable, that birds of prey, as vultures, could scent carcasses at such immense distances, as they are said to do. We were led to call in question the accuracy of this opinion, on recollecting the observations of some travellers, who have remarked birds of prey directing their course

towards dead animals, floating in the rivers in India, where the wind blows steadily from one point of the compass, for months in succession. It was not easy to conceive, that the effluvium from a putrid carcass in the water, could proceed in direct opposition to the current of air, and affect the olfactory nerves of birds, at so many miles distant. We were disposed to believe, that these birds were directed towards the carrion rather by the sense of seeing, than by that of smelling. This opinion is confirmed by the following observations of our friend Audubon, communicated to us by him, some time ago, for our *Philosophical Journal*:—

“As soon as, like me, you shall have seen the turkey buzzard follow with arduous closeness of investigation, the skirts of the forests, the meanders of creeks and rivers, sweeping over the whole of extensive plains, glancing his quick eye in all directions, with as much intentness as ever did the noblest of falcons, to discover where below him lies the suitable prey; when, like me, you have repeatedly seen that bird pass over objects, calculated to glut his voracious appetite, unnoticed, because unseen; and when you have also observed the greedy vulture, propelled by hunger, if not famine, moving like the wind, suddenly round his course, as the carrion attracts his eye; then will you abandon the deeply rooted notion, that this bird possesses the faculty of discovering, by his sense of smell, his prey at an immense distance.

“This power of smelling so acutely, I adopted as a fact, from my youth. I had read of this when a child; and many of the theorists, to whom I subsequently spoke of it, repeated the same with enthusiasm, the more particularly as they considered it an extraordinary gift of nature. But I had already observed, that nature, although wonderfully bountiful, had not granted more to any one individual than was necessary, and that no one was possessed of any two of the senses in a very high state of perfection; that if it had a good scent, it needed not so much acuteness of sight, and *vice versa*.

When I visited the Southern States, and had lived, as it were, amongst these vultures for several years, and discovered, thousands of times, that they did not smell me when I approached them, covered by a tree, until within a few feet; and that when so near, or at a greater distance, I shewed myself to them, they instantly flew away much frightened,—the idea evaporated, and I assiduously engaged in a series of experiments, to prove to myself, at least, how far this acuteness of smell existed, or if it existed at all.

“ I sit down to communicate to you the results of those experiments, and leave for you to conclude how far, and how long, the world has been imposed on by the mere assertions of men who had never seen more than the skins of our vultures, or heard the accounts from men caring little about observing nature closely.

“ My *First Experiment* was as follows :— I procured a skin of our common deer, entire to the hoofs, and stuffed it carefully with dried grass until filled rather above the natural size—suffered the whole to become perfectly dry, and as hard as leather—took it to the middle of a large open field—laid it down on its back with the legs up and apart, as if the animal was dead and putrid. I then retired about a few hundred yards, and, in the lapse of some minutes, a vulture, coursing round the field tolerably high, espied the skin, sailed directly towards it, and alighted within a few yards of it. I ran immediately, covered by a large tree, until within about forty yards, and from that place could spy the bird with ease. He approached the skin—looked at it without apparent suspicion—jumped on it—raised his tail, and voided itself freely, (as you well know all birds of prey in a wild state generally do before feeding,) then approaching the eyes, that were here solid globes of hard, dried, and painted clay, attacked first one, and then the other, with, however, no farther advantage than that of disarranging them. This part was abandoned; the bird walked to the other extremity of the pretended animal, and there, with much exertion, tore the stitches apart, until much

fodder and hay was pulled out; but no flesh could the bird find or smell; he was intent on discovering some where none existed, and, after reiterated efforts, all useless, he took flight, coursed about the field, when, suddenly rounding and falling, I saw him kill a small garter snake, and swallow it in an instant. The vulture rose again, sailed about, and passed several times quite low over the stuffed deerskin, as if loth to abandon so good looking a prey.

“ Judge of my feelings when I plainly saw that the vulture, which could not discover, through its extraordinary sense of smell, that no flesh, either fresh or putrid, existed about that skin, could at a glance see a snake, scarcely as large as a man’s finger, alive, and destitute of odour, hundreds of yards distant. I concluded that at all events his ocular powers were much better than his sense of smell.

“ *Second Experiment.*—I had a large dead hog hauled some distance from the house, and put into a ravine, about twenty feet deeper than the surface of the earth around it, narrow and winding much, filled with briars and high cane. In this I made the negroes conceal the hog, by binding cane over it, until I thought it would puzzle either buzzards, carrion crows, or any other birds, to see it, and left it for two days. This was early in the month of July, when, in this latitude, a dead body becomes putrid and extremely fetid in a short time. I saw from time to time many vultures, in search of food, sail over the field and ravine in all directions, but none discovered the carcass, although during this time several dogs had visited it and fed plentifully on it. I tried to go near it, but the smell was so insufferable when within thirty yards, that I abandoned it, and the remnants were entirely destroyed at last through natural decay.

“ I then took a young pig, put a knife through its neck, and made it bleed on the earth and grass about the same, and, having covered it closely with leaves, also watched the result. The vultures saw the fresh blood, alighted about it, followed it down into the

rayne, discovered by the blood of the pig, and devoured it, when yet quite fresh, within my sight.

“Not contented with these experiments, which I already thought fully conclusive, having found two young vultures, about the size of pullets, covered yet with down, and looking more like quadrupeds than birds, I had them brought home and put into a large coop in the yard, in the view of every body, and attended to their feeding myself. I gave them a great number of red-headed woodpeckers and parakeets, birds then easy to procure, as they were feeding daily on the mulberry trees in the immediate neighbourhood of my orphans.

“These the young vultures could tear to pieces by putting both feet on the body, and applying the bill with great force. So accustomed to my going towards them were they in a few days, that when I approached the cage with hands filled with game for them, they immediately began hissing and gesticulating very much like young pigeons, and putting their bills to each other, as if expecting to be fed mutually, as their parent had done. Two weeks elapsed; black feathers made their appearance, and the down diminished. I remarked an extraordinary increase of their legs and bill; and thinking them fit for trial, I closed three sides of the cage with planks, leaving the front only with bars for them to see through; had the cage cleaned, washed, and sanded, to remove any filth attached to it from the putrid flesh that had been in it; and turned its front immediately from the course I usually took towards it with food for them. I approached it often barefooted, and soon perceived that if I did not accidentally make a noise, the young birds remained in their silent upright attitudes, until I shewed myself to them by turning to the front of their prison. I frequently fastened a dead squirrel or rabbit, cut open, with all the entrails hanging loosely, to a long pole, and in this situation would put it to the back part of the cage; but no hissing, no movement was made: when, on the contrary, I presented the end of the pole, thus covered, over the cage, no sooner would it appear beyond the edge, than

my hungry birds would jump against the bars, hiss furiously, and attempt all in their power to reach the food. This was repeatedly done with fresh and putrid substances, all very congenial to their taste.

“ Satisfied within myself, I dropped these trials, but fed the birds until full grown, and then turned them out into the yard of the kitchen for the purpose of picking up whatever substances might be thrown to them. Their voracity, however, soon caused their death; young pigs were not safe, if within their reach; and young ducks, turkeys, or chickens, were such a constant temptation, that the cook, unable to watch them, killed them both, to put an end to their depredations.

“ Whilst I had these two young vultures in confinement, an extraordinary occurrence took place respecting an old bird of the same kind, which I cannot help relating to you. This bird, sailing over the yard whilst I was experimenting with the pole and squirrels, saw the food, and alighted on the roof of one of the out-houses, then alighted on the ground, walked directly to the cage, and attempted to reach the food within. I approached it carefully, and it hopped off a short distance; as I retired, it returned, when always the appearances of the strongest congratulations would take place from the young towards this new comer. I directed several young negroes to drive it gently towards the stable, and to try to make it go in there. This would not do; but, after a short time, I helped to drive it into that part of the gin-house where the cotton seeds are deposited, and there caught it. I easily discovered that the bird was so emaciated, that to this state of poverty only I owed my success. I put it in with the young, who both at once jumped about him, making most extraordinary gestures of welcome; whilst the old bird, quite discomfited at his confinement, lashed both with great violence with his bill. Fearing the death of the young, I took them out, and fed plentifully the old bird: his appetite had become so great through fasting, that he ate too much, and died of suffocation.

“ I could enumerate many more instances, indicating

that the power of smelling in these birds has been grossly exaggerated, and that, if they can smell objects at any distance, they can see the same objects much farther. I would ask any observer of the habits of birds, why, if vultures could smell at a great distance their prey, they should spend the greater portion of their lives hunting for it, when they are naturally so lazy, that, if they are fed in one place, they never will leave it; and merely make such a change as is absolutely necessary to enable them to reach it. But I will now enter on their habits, and you will easily discover how this far famed power has originated.

“Vultures are gregarious, and often associate in flocks of twenty, forty, or more; hunting thus together, they fly in sight of each other, and thus cover an immense extent of country. A flock of twenty may easily survey an area of two miles, as they go turning in large circles, often inspecting each other in their lines, as if forming a vast chain of rounded links; some are high, whilst others are low; not a spot is passed unseen; and, consequently, the moment that a prey is discovered, the favoured bird rounds to, and, by the impetuosity of its movements, gives notice to its nearest companion, who immediately follows him, and is successively attended by all the rest. Thus, the farthest from the discoverer being at a considerable distance, sails in a direct line towards the spot indicated to him by the flight of the others, who all have gone in a straight course before him, with the appearance of being impelled by this extraordinary power of smelling, so erroneously granted them. If the object discovered is large, lately dead, and covered with a skin too tough to be ate, and torn asunder, and afford free scope to their appetite, they remain about it, and in the neighbourhood. Perched on high, dead limbs in such conspicuous positions are easily seen by other vultures, who, through habit, know the meaning of such stoppages, and join the first flock, going also directly, and affording farther evidence to those persons who are satisfied with appearances only. In this manner, I have seen several hundreds of vultures

and carrion crows assembled near a dead ox, at the dusk of evening, that had only two or three in the morning, when some of the latter comers had probably travelled hundreds of miles, searching diligently themselves for food, and probably would have had to go much farther, had they not espied this association. Around the spot both species remain; some of them examining the dead body, giving it a tug in those parts most accessible, until putridity ensues. The accumulated number then fall to work, exhibiting a most disgusting picture of famished cannibals; the strongest driving the weakest, and the latter harassing the former with all the power that a disappointed hungry stomach can produce. They are seen jumping off the carcass, re-attacking it, entering it, and wrestling for portions partly swallowed by two or more of them, hissing at a furious rate, and clearing every moment their nostrils from the filth that enters there, and stops their breathing. No doubt remains on my mind, that the great outward dimensions of these nostrils were allotted them for that especial and necessary purpose.

“The animal is soon reduced to a mere skeleton; no portion of it being now too hard not to be torn apart and swallowed, leaving merely the bare bones. Soon all these bloody feeders are seen standing gorged, and scarcely able to take wing. At such times the observer may approach very near the group, whilst engaged in feeding, and see the vultures in contact with the dogs, who really, by smelling, have found the prey. Whenever this happens, it is with the greatest reluctance that the birds suffer themselves to be driven off, although frequently the sudden scowl, or growl, of the dogs will cause nearly all the vultures to rise a few yards in the air. I have several times seen the buzzards feeding at one extremity of the carcass, whilst the dogs were tearing the other; but, if a single wolf approached, or a pair of white-headed eagles, driven by extreme hunger, then the place is abandoned to them, until their wants are supplied. The repast finished, each bird gradually rises to the highest branches of the nearest trees, and remains

there until the full digestion of all the food they have swallowed is completed; from time to time opening their wings to the breeze, or to the sun, either to cool or warm themselves. The traveller may then pass them unnoticed, or, if noticed, a mere sham of flying off is made. The bird slowly recloses its wings, looks at the person as he passes, and remains there until hunger again urges him onwards. This takes oftentimes more than a day, when gradually, and very often singly, each vulture is seen to depart.

“ They now rise to an immense height, cutting with great elegance and ease many circles through the air; now and then gently closing their wings, they lanch themselves obliquely with great swiftness for several hundred yards, check and resume their portly movements, ascending until, like mites in the distance, they are seen altogether to leave that neighbourhood, to seek farther the needed means of subsistence.

“ Having heard it said, no doubt with the desire to prove that buzzards smell their prey, that these birds usually fly against the breeze, I may state, that, in my opinion, this action is simply used, because it is easier for birds to maintain themselves on the wing encountering a moderate portion of wind, than when flying before it; but I have so often witnessed these birds bearing away under the influence of a strong breeze, as if enjoying it, that I consider either case as a mere incident connected with their pleasures or their wants.

“ Here, my dear sir, let me relate one of those facts, curious in itself, and attributed to mere instinct, but which I cannot admit under that appellation, and which, in my opinion, so borders on reason, that, were I to call it by that name, I hope you will not look on my judgment as erroneous, without your farther investigating the subject in a more general point of view. During one of those heavy gusts that so often take place in Louisiana in the early parts of summer, I saw a flock of these birds, which had undoubtedly discovered that the current of air that was tearing all over them was a mere sheet, raise themselves obliquely against it

with great force, slide through its impetuous current, and reassume, *above it*, their elegant movements.

"The power given to them by nature of discerning the approaching death of a wounded animal is truly remarkable. They will watch each movement of any individual thus assailed by misfortune, and follow it with keen perseverance, until the loss of life has rendered it their prey. A poor old emaciated horse or ox, the deer mired on the margin of the lake, where the timid animal has resorted to escape flies and mosquitoes, so fatiguing in summer, is seen in distress with exultation by the buzzard. He immediately alights, and if the animal does not extricate itself, waits and gorges in peace on as much of the flesh as the nature of the spot will allow. They do more; they often watch the young kid, the lamb, and the pig, issuing from the mother's womb, and attack it with direful success; yet, notwithstanding this, they frequently pass over a healthy horse, hog, or other animal, lying as if dead, basking in the sunshine, without even altering their course in the least. Judge, then, my dear sir, how well they must see.

"Opportunities of devouring young living animals are so very frequent among large plantations in this country, that to deny them would be ridiculous, although I have heard it attempted by European writers.

"During the terrifying inundations of the Mississippi, I have very frequently seen many of those birds alight on the dead floating bodies of animals, drowned by the water in the low lands, and washed by the current, gorging themselves at the expense of the squatter, who often loses the greater portion of his wandering flocks on such occasions.

"Dastardly withal, and such cowards are they, that our smaller hawks can drive them off any place; the little king bird proves, indeed, a tyrant, whenever he espies the large marauder sailing about the spot where his dearest mate is all intent on incubation; and the

eagle, if hungry, will chase him, force him to disgorge his food in a moment, and to leave it at his disposal.

"Many of those birds, accustomed by the privileges granted them by law, of remaining about the cities and villages in our Southern States, seldom leave them, and might almost be called a second set, differing widely in habits from those that reside constantly at a distance from these places. Accustomed to be fed, they are still more lazy; their appearance exhibits all the nonchalance belonging to the garrisoned half-paid soldier. To move is for them a hardship; and nothing but extreme hunger will make them fly down from the roof of the kitchen into the yard, or follow the vehicles employed in cleaning the streets from disagreeable substances, except where (at Natchez for instance) the number of these expecting parasites is so great, that all the refuse of the town, within their reach, is insufficient; then they are seen following the scavengers' carts, hopping, flying, and alighting all about it, amongst grunting hogs and snarling dogs, until the contents, having reached a place of destination outside the suburbs, are emptied, and swallowed by them.

"Whilst taking a view of that city from her lower ancient fort, I have for several days seen exhibitions of this kind.

"I do not think that the vultures thus attached to the cities, are so much inclined to multiply as those more constantly resident in the forests, perceiving no diminution of number during the breeding season, and having remarked, that many individuals known to me by particular marks made on them, and a special cast of countenance, were positively constant residents of the town. The *Vultur aura* is by no means so numerous as the *Atratus*. I have seldom seen more than twenty-five or thirty together; where, on the contrary, the latter are frequently associated to the number of a hundred.

"The *Vultur aura* is a more retired bird in habits, and more inclined to feed on dead game, snakes, lizards, frogs, and the dead fish that frequently are found about

the sand flats of rivers, and borders of the sea shore; is more cleanly in its appearance; and, as you will see by the difference in the drawings in both species, a neater and better formed bird. Its flight is also vastly superior in swiftness and elegance, needing but a few flaps of its large wings to raise it from the ground, after which it will sail for miles, by merely turning either on one side or the other, and using its tail so slowly, to alter its course, that a person looking at it, whilst elevated and sailing, would be inclined to compare it to a machine, fit to perform just a certain description of evolutions. The noise made by the vultures through the air, as they glide obliquely towards the earth, is often as great as that of our largest hawks, when falling on their prey; but they never reach the ground in this manner, always checking when about a hundred yards high, and going several rounds, to examine well the spot they are about to alight on. The *Vultur aura* cannot bear cold weather well: the few who, during the heat of the summer, extend their excursions to the Middle, or Northern States, generally all return at the approach of winter; and I believe also, that very few of these birds breed eastward of the pine swamps of West Jersey. They are much attached to particular roosting trees, and I know will come to them every night from a great distance. On alighting on these, each of them, anxious for a choice of place, creates always a general disturbance; and often, when quite dark, their hissing noise is heard, in token of this inclination for supremacy. These roosting trees of the buzzards are generally in deep swamps, and mostly high, dead cypresses. Frequently, however, they roost with the carrion crows, (*Vultur atratus*), and then it is on the largest dead timber of our fields, not unfrequently close to the houses. Sometimes, also, this bird will roost close to the body of a thick leaved tree. In such position, I have killed several, when hunting wild turkeys by moonlight nights, and mistaking them for these latter birds.

“ In Mississippi, Louisiana, Georgia, and Carolina,

they prepare to breed early in the month of February, in common with almost all the genus *Falco*. The most remarkable habit attached to their life is now to be seen : they assemble in parties of eight or ten, sometimes more, on large fallen logs, males and females exhibiting the strongest desire to please mutually, and forming attachments by the choice of a mate by each male, that, after many caresses, leads her off on the wing from the group, neither to mix or associate with any more, until their offspring are well able to follow them in the air ; after that, and until incubation takes place, (about two weeks,) they are seen sailing side by side the whole day.

“ These birds form no nest, yet are very choice respecting the place of deposit for their two eggs. Deep in the swamps, but always above the line of overflowing watermark, a large hollowed tree is sought, either standing or fallen, and the eggs are dropped on the mouldy particles inside ; sometimes immediately near the entrance, at other times as much as twenty feet in. Both birds incubate alternately, and both feed each other while sitting, by disgorging the contents of the stomach, or part of them, immediately close before the bird that is sitting. Thirty-two days are needed to bring forth the young from the shell ; a thick down covers them completely ; the parents, at that early period, and, indeed, for nearly two weeks, feed them, by gorging food considerably digested in their bill, in the manner of the common pigeons. The down acquires length, becomes thinner, and of a deeper tint, as the bird grows older. The young vultures, at three weeks, are large for their age, weighing then upwards of a pound, but extremely clumsy and inactive ; unable to keep up their wings, then partly covered by large pen feathers, they drag them almost to the ground, bearing their whole weight on the full length of their legs and feet.

“ If approached at that time by a stranger or enemy, they hiss with a noise resembling that of a strangling

cat or fox, swell themselves, and hop sidewise as fast as in their power.

“ The parents, whilst sitting, and equally disturbed, act in the same manner,— fly only a very short distance, waiting there the departure of the offender to reassume their duty. As the young grow larger, the parents throw their food merely before them, and, with all their exertions, seldom bring their young offspring fat to the field. Their nests become so fetid, before the final departure of the young birds, that a person forced to remain there half an hour, must almost be suffocated.

“ I have been frequently told that the same pair will not abandon their first nests or place of deposit, unless broken up during incubation. This would attach to the vulture a constancy of affection that I cannot believe exists, as I cannot believe that pairing in the manner described is of any longer duration than the necessitous call of nature for the one season; and, again, were they so inclined, they would never congregate in the manner they do, but would go in single pairs all their lives like eagles.

“ Vultures do not possess, in any degree, the power of bearing off their prey, as falcons do, unless it be slender portions of entrails hanging by the bill. When chased by others from a carcass, it even renders them very awkward in their flight, and forces them to the earth again almost immediately.

“ Many persons in Europe believe that buzzards prefer putrid flesh to any other. This is a mistake. Any flesh that they can at once tear with their very powerful bill in pieces, is swallowed, no matter how fresh. What I have said of their killing and devouring young animals, is sufficient proof of this; but it frequently happens that these birds are forced to wait until the hide of their prey gives way to the bill. I have seen a large dead alligator, surrounded by vultures and carrion crows, of which nearly the whole of the flesh was so completely decomposed before these birds could perforate the tough skin of the monster, that, when at last it took place, their disappointment was

apparent, and the matter, in an almost fluid state, abandoned by the vultures."

So far Audubon. We may add, that the toucan is a bird which ranks next to the vulture in discovering, whether by smell or sight, the carrion on which it feeds. The great size of its bill was supposed to admit of an extensive distribution of the olfactory nerve, and thus to account for its supposed power of smelling at great distances; but careful examination shews that there is no such extensive distribution of the nerve for smelling: but the eye of this bird is rather larger than the whole brain, and its power of vision is most acute. Hence, in countries where the toucan occurs, it generally arrives a little in the rear of the vulture, and remains until the larger bird is glutted; while smaller birds of prey, at a still more retired distance, pay similar respect to the toucan.

2. *VULTUR CALIFORNIANUS*, SHAW. — CALIFORNIAN VULTURE.

DR RICHARDSON, in the *Northern Zoology*, says,— "This great vulture, which is four feet eight inches in length, and between the tips of the wings nine feet eight inches, is an inhabitant of the shores of the Pacific, and was first introduced to the notice of naturalists by Mr Menzies, who brought a specimen from California, and deposited it in the British Museum. It has not been discovered to the eastward of the Rocky Mountains, and I can, consequently, make no addition to its history from personal observation; but Mr David Douglas has given an interesting account of the habits of the species in the *Zoological Journal*, from which the following notices are extracted. He represents it as a common bird in the woody districts of California, and that he met with it in the summer as far north as the forty-ninth degree of latitude; but no where so abundantly as in the valley of the Columbia, between the Grand Rapids and the sea. They build, he says, in the most secret and impenetrable

parts of the pine forests, invariably selecting the loftiest trees that overhang the precipices on the deepest and least accessible parts of the mountain valleys. The nest is large, composed of strong thorny twigs and grass, in every way similar to the nests of the eagle tribe, but more slovenly constructed. The same pair resort for several years to the same nest, bestowing little trouble or attention in repairing it. They lay two nearly spherical *jet black* eggs, about the size of those of a goose. They hatch generally about the first of June, and the period of incubation is twenty-nine or thirty-one days. The young are covered with thick whitish down, and are incapable of leaving the nest until the fifth or sixth week. Their food is carrion, or dead fish : in no instance will they attack any living animal, unless it be wounded and unable to walk. Their senses of smelling and seeing are remarkably keen. In searching for prey, they soar to a great altitude, and on discovering a wounded deer, or other animal, they follow its track until it sinks, when they descend precipitately on their object. Although only one bird may be at first in possession of the carcass, few minutes elapse before the prey is surrounded by great numbers, and it is then devoured to a skeleton within an hour, even though it be one of the larger animals, — a stag, for instance, or a horse. Their voracity is almost insatiable ; and they are extremely ungenerous, suffering no other animal to approach them while feeding. After eating, they become so sluggish and indolent as to remain in the same place until urged by hunger to go in quest of another repast. At such times they perch on decayed trees, with their heads so much retracted, as to be with difficulty observed through the long, loose, lanceolate feathers of the collar. The wings, at the same time, hang down over the feet. This position they invariably preserve in dewy mornings, or after rains. Except after eating, or while guarding their nest, they are so excessively wary, that the hunter can scarcely ever approach sufficiently near even for buck-shot to take effect on them,

the fullness of the plumage affording them a double chance of escaping uninjured. Their flight is slow, steady, and particularly graceful, gliding along with scarcely any apparent motion of the wings, the tips of which are curved upwards in flying. They are seen in greatest numbers, and soar highest, before hurricanes or thunder-storms. Their quills are used by the hunters as tubes for tobacco-pipes."

GENUS II. — *FALCO*.3. *FALCO WASHINGTONII*. — THE BIRD OF WASHINGTON.

AUDUBON, PLATE IX. MALE.

OF this magnificent bird, Audubon, in his *Ornithological Biography*, gives the following animated account:—

"It was in the month of February, 1814, that I obtained the first sight of this noble bird, and never shall I forget the delight which it gave me. Not even Herschel, when he discovered the planet which bears his name, could have experienced more rapturous feelings. We were on a trading voyage, ascending the Upper Mississippi. The keen wintry blasts whistled around us, and the cold from which I suffered, had, in a great degree, extinguished the deep interest which, at other seasons, this magnificent river has been wont to awake in me. I lay stretched beside our patroon. The safety of the cargo was forgotten, and the only thing that called my attention was the multitude of ducks, of different species, accompanied by vast flocks of swans, which from time to time passed us. My patroon, a Canadian, had been engaged many years in the fur trade. He was a man of much intelligence; and, perceiving that these birds had engaged my curiosity, seemed anxious to find some new object to divert me. An eagle flew over us. 'How fortunate!' he exclaimed; 'this is what I could have wished. Look, sir! the great eagle, and the only one I have seen since I left the lakes.' I was instantly on my feet, and, having observed it attentively, concluded, as I lost it in the

distance, that it was a species quite new to me. My patroon assured me, that such birds were indeed rare; that they sometimes followed the hunters, to feed on the entrails of animals which they had killed, when the lakes were frozen over, but that when the lakes were open, they would dive in the daytime after fish, and snatch them up in the manner of the fishing hawk; and that they roosted generally on the shelves of the rocks, where they built their nests, of which he had discovered several by the quantity of white dung scattered below.

"Convinced that the bird was unknown to naturalists, I felt particularly anxious to learn its habits, and to discover in what particulars it differed from the rest of its genus. My next meeting with this bird was a few years afterwards, whilst engaged in collecting crayfish on one of those flats which border and divide Green River, in Kentucky, near its junction with the Ohio. The river is there bordered by a range of high cliffs, which, for some distance, follow its windings. I observed on the rocks, which, at that place, are nearly perpendicular, a quantity of white ordure, which I attributed to owls that might have resorted thither. I mentioned the circumstance to my companions, when one of them, who lived within a mile and a half of the place, told me it was from the nest of the brown eagle, meaning the white-headed eagle (*Falco leucocephalus*,) in its immature state. I assured him this could not be, and remarked, that neither the old nor the young birds of that species ever build in such places, but always in trees. Although he could not answer my objection, he stoutly maintained that a brown eagle of some kind, above the usual size, had built there; and added, that he had espied the nest some days before, and had seen one of the old birds dive and catch a fish. This he thought strange, having, till then, always observed that both brown eagles and bald eagles procured this kind of food by robbing the fish-hawks. He said, that if I felt particularly anxious to know what nest it was, I might soon satisfy myself, as the old birds would come and feed their young with fish, for he had seen them do so before.

"In high expectation, I seated myself about a hundred yards from the foot of the rock. Never did time pass more slowly. I could not help betraying the most impatient curiosity, for my hopes whispered it was a sea eagle's nest. Two long hours had elapsed before the old bird made his appearance, which was announced to us by the loud hissings of the two young ones, which crawled to the extremity of the hole to receive a fine fish. I had a perfect view of this noble bird as he held himself to the edging rock, hanging like the barn, bank, or social swallow, his tail spread, and his wings partly so. I trembled lest a word should escape from my companions. The slightest murmur had been treason from them. They entered into my feelings, and, although little interested, gazed with me. In a few minutes the other parent joined her mate, and, from the difference in size, (the female of rapacious birds being much larger,) we knew this to be the mother bird. She also had brought a fish; but, more cautious than her mate, she glanced her quick and piercing eye around, and instantly perceived that her abode had been discovered. She dropped her prey, with a loud shriek communicated the alarm to the male, and, hovering with him over our heads, kept up a growling cry, to intimidate us from our suspected design. This watchful solicitude I have ever found peculiar to the female — must I be understood to speak only of birds?

"The young having concealed themselves, we went and picked up the fish which the mother had let fall. It was a white perch, weighing about $5\frac{1}{2}$ lb. The upper part of the head was broken in, and the back torn by the talons of the eagle. We had plainly seen her bearing it in the manner of the fish hawk.

"This day's sport being at an end, as we journeyed homewards, we agreed to return the next morning, with the view of obtaining both the old and young birds; but rainy and tempestuous weather setting in, it became necessary to defer the expedition till the third day following, when, with guns and men all in

readiness, we reached the rock. Some posted themselves at the foot, others upon it, but in vain. We passed the entire day, without either seeing or hearing an eagle, the sagacious birds, no doubt, having anticipated an invasion, and removed their young to new quarters.

“ I come at last to the day which I had so often and so ardently desired. Two years had gone by since the discovery of the nest, in fruitless excursions; but my wishes were no longer to remain ungratified. In returning from the little village of Henderson, to the house of Doctor Rankin, about a mile distant, I saw an eagle rise from a small enclosure not a hundred yards before me, where the Doctor had, a few days before, slaughtered some hogs, and alight upon a low tree branching over the road. I prepared my double-barreled piece, which I constantly carry, and went slowly and cautiously towards him. Quite fearlessly he awaited my approach, looking upon me with undaunted eye. I fired, and he fell. Before I reached him, he was dead. With what delight did I survey the magnificent bird! Had the finest salmon ever pleased him as he did me?—Never. I ran and presented him to my friend, with a pride which they alone can feel, who, like me, have devoted themselves from their earliest childhood to such pursuits, and who have derived from them their first pleasures. To others I must seem to ‘ prattle out of fashion.’ The Doctor, who was an experienced hunter, examined the bird with much satisfaction, and frankly acknowledged he had never before seen or heard of it.

“ The name which I have chosen for this new species of eagle, ‘ the bird of Washington,’ may, by some, be considered as preposterous and unfit; but as it is indisputably the noblest bird of its genus that has yet been discovered in the United States, I trust I shall be allowed to honour it with the name of one yet nobler, who was the saviour of his country, and whose name will ever be dear to it. To those who may be curious to know my reasons, I can only say, that, as the new world gave me birth and liberty, the great man who

ensured its independence is next to my heart. He had a nobility of mind, and a generosity of soul, such as are seldom possessed. He was brave, so is the eagle; like it, too, he was the terror of his foes; and his fame, extending from pole to pole, resembles the majestic soarings of the mightiest of the feathered tribe. If America has reason to be proud of her Washington, so has she to be proud of her great eagle.

"In the month of January following, I saw a pair of these eagles flying over the falls of the Ohio, one in pursuit of the other. The next day I saw them again. The female had relaxed her severity, had laid aside her coyness, and to a favourite tree they continually resorted. I pursued them unsuccessfully for several days, when they forsook the place.

"The flight of this bird is very different from that of the white-headed eagle. The former encircles a greater space, whilst sailing, keeps nearer to the land and the surface of the water, and when about to dive for fish, falls in a spiral manner, as if with the intention of checking any retreating movement which its prey might attempt, darting upon it only when a few yards distant. The fish-hawk often does the same. When rising with a fish, the bird of Washington flies to a considerable distance, forming, in its line of course, a very acute angle with the surface line of the water. My last opportunity of seeing this bird, was on the 15th of November, 1821, a few miles above the mouth of the Ohio, when two passed over our boat, moving down the river with a gentle motion. In a letter from a kind relative, Mr W. Bakewell, dated 'Falls of the Ohio, July, 1819,' and containing particulars relative to the swallow-tailed hawk, (*Falco furcatus*,) that gentleman says:—'Yesterday, for the first time, I had an opportunity of viewing one of those magnificent birds, which you call the sea eagle, as it passed low over me, whilst fishing. I shall be really glad when I can again have the pleasure of seeing your drawing of it.'

"Whilst in Philadelphia, about twelve months ago, I

had the gratification of seeing a fine specimen of this eagle at Mr Brano's museum. It was a male in fine plumage, and beautifully preserved. I wished to purchase it, with a view to carry it to Europe, but the price put upon it was above my means.

"My excellent friend, Richard Harlan, M.D. of that city, speaking of this bird, in a letter, dated 'Philadelphia, August 19, 1830,' says, 'That fine specimen of Washington eagle, which you noticed in Brano's museum, is at present in my possession. I have deposited it in the academy, where it will most likely remain.' I saw the specimen alluded to, which, in as far as I could observe, agreed in size and markings exactly with my drawing, to which, however, I could not at the time refer, as it was, with the whole of my collection, deposited in the British Museum, under the care of my ever kind and esteemed friend, J. G. Children, Esq. of that institution.

"The glands containing the oil used for the purpose of anointing the surface of the plumage are extremely large. Their contents have the appearance of hog's lard, which had been melted and become rancid. This bird makes more copious use of that substance than the white-headed eagle, or any of the tribe to which it belongs, excepting the fish-hawk, the whole plumage looking, upon close examination, as if it had received a general coating of a thin clear dilution of gum-arabic, and presenting less of the downy gloss exhibited in the upper part of the white-headed eagle's plumage. The male bird weighs $14\frac{1}{2}$ lb. avoirdupois, and measures 3 feet 7 inches in length, and 10 feet 2 inches in extent."

4. *FALCO FULVUS*. — RING-TAIL, OR GOLDEN EAGLE.

DR RICHARDSON says, at page 12 of the *Northern Zoology*, — "This powerful bird breeds in the recesses of the sub-alpine country which skirts the Rocky Mountains, and is seldom seen farther to the eastward. It is held by the aborigines of America, as it is by almost every other people, to be an emblem of

might and courage; and the young Indian warrior glories in his eagle plume as the most honourable ornament with which he can adorn himself. Its feathers are attached to the calumets, or smoking pipes, used by the Indians in the celebration of their solemn festivals, which has obtained for it the name of the calumet eagle. Indeed, so highly are these ornaments prized, that a warrior will often exchange a valuable horse for the tail feathers of a single eagle. The strength of vision of this bird must almost exceed conception, for it can discover its prey and pounce upon it from a height at which it is itself, with its expanded wings, scarcely visible to the human eye. When looking for its prey, it sails in large circles, with its tail spread out, but with little motion of its wings; and it often soars aloft in a spiral manner, its gyrations becoming gradually less and less perceptible, until it dwindles to a mere speck, and is at length entirely lost to the view. A story is current, on the plains of the Saskatchewan, of a half-breed Indian, who was vaunting his prowess before a band of his countrymen, and wishing to impress them with a belief of his supernatural powers. In the midst of his harangue an eagle was observed suspended as it were in the air, directly over his head, upon which, pointing aloft with his dagger, which glistened brightly in the sun, he called on the royal bird to come down. To his own amazement, no less than the consternation of the surrounding Indians, the eagle seemed to obey the charm, for instantly, shooting down with the velocity of an arrow, it impaled itself on the point of his weapon!"

5. *FALCO LEUCOCEPHALUS*.

THE WHITE-HEADED EAGLE, OR BALD EAGLE.

AUDUBON, PLATE XXXI. MALE.

To the delightful history of this bird given by Wilson, vol. 1, p. 22, we have pleasure in adding that of Audubon, which will enable our readers to form an

estimate of the descriptive powers of these two eminent individuals :—

“The figure of this noble bird is well known throughout the civilized world, emblazoned as it is on our national standard, which waves in the breeze of every clime, bearing to distant lands the remembrance of a great people living in a state of peaceful freedom. May that peaceful freedom last for ever !

“The great strength, daring, and cool courage of the white-headed eagle, joined to his unequalled power of flight, render him highly conspicuous among his brethren. To these qualities, did he add a generous disposition towards others, he might be looked up to as a model of nobility. The ferocious, overbearing, and tyrannical temper which is ever and anon displaying itself in his actions, is nevertheless best adapted to his state, and was wisely given him by the Creator, to enable him to perform the office assigned to him.

“To give you, kind reader, some idea of the nature of this bird, permit me to place you on the Mississippi, on which you may float gently along, while approaching winter brings millions of water fowl on whistling wings, from the countries of the north, to seek a milder climate in which to sojourn for a season. The eagle is seen perched, in an erect attitude, on the highest summit of the tallest tree, by the margin of the broad stream : His glistening but stern eye looks over the vast expanse : He listens attentively to every sound that comes to his quick ear from afar, glancing now and then on the earth beneath, lest even the light tread of the fawn may pass unheard : His mate is perched on the opposite side, and, should all be tranquil and silent, warns him by a cry to continue patient : At this well known call the male partly opens his broad wings, inclines his body a little downwards, and answers to her voice in tones not unlike the laugh of a maniac : The next moment he resumes his erect attitude, and again all around is silent : Ducks of many species, the teal, the widgeon, the mallard, and others, are seen passing with great rapidity, and following the course of the current ; but

the eagle heeds them not; they are at that time beneath his attention. The next moment, however, the wild, trumpet-like sound of a yet distant but approaching swan is heard. A shriek from the female eagle comes across the stream,—for, kind reader, she is fully as alert as her mate. The latter suddenly shakes the whole of his body, and with a few touches of his bill, aided by the action of his cuticular muscles, arranges his plumage in an instant. The snow white bird is now in sight: her long neck is stretched forward; her eye is on the watch, vigilant as that of her enemy; her large wings seem with difficulty to support the weight of her body, although they flap incessantly. So irksome do her exertions seem, that her very legs are spread beneath her tail, to aid her in her flight. She approaches, however. The eagle has marked her for his prey. As the swan is passing the dreaded pair, starts from his perch, in full preparation for the chase, the male bird, with an awful scream, that to the swan's ear brings more terror than the report of the large duck gun.

“ Now is the moment to witness the display of the eagle's powers. He glides through the air like a falling star, and, like a flash of lightning, comes upon the timorous quarry, which now, in agony and despair, seeks, by various manœuvres, to elude the grasp of his cruel talons. It mounts, doubles, and willingly would plunge into the stream, were it not prevented by the eagle, which, long possessed of the knowledge that by such a stratagem the swan might escape him, forces it to remain in the air by attempting to strike it with his talons from beneath. The hope of escape is soon given up by the swan. It has already become much weakened, and its strength fails at the sight of the courage and swiftness of its antagonist. Its last gasp is about to escape, when the ferocious eagle strikes with his talons the under side of its wing, and with unresisted power forces the bird to fall in a slanting direction upon the nearest shore.

“ It is then, reader, that you may see the cruel spirit

of this dreaded enemy of the feathered race, whilst, exulting over his prey, he for the first time breathes at ease. He presses down his powerful feet, and drives his sharp claws deeper than ever into the heart of the dying swan. He shrieks with delight as he feels the last convulsions of his prey, which has now sunk under his unceasing efforts to render death as painfully felt as it can possibly be. The female has watched every movement of her mate; and if she did not assist him in capturing the swan, it was not from want of will, but merely that she felt full assurance that the power and courage of her lord were quite sufficient for the deed. She now sails to the spot where he eagerly awaits her, and, when she has arrived, they together turn the breast of the luckless swan upwards, and gorge themselves with gore.

“ At other times, when these eagles, sailing in search of prey, discover a goose, a duck, or a swan, that has alighted on the water, they accomplish its destruction in a manner that is worthy of your attention. The eagles, well aware that water-fowl have it in their power to dive at their approach, and thereby elude their attempts upon them, ascend in the air in opposite directions over the lake or river, on which they have observed the object which they are desirous of possessing. Both eagles reach a certain height, immediately after which, one of them glides with great swiftness towards the prey; the latter, meantime, aware of the eagle's intention, dives the moment before he reaches the spot. The pursuer then rises in the air, and is met by its mate, which glides toward the water-bird, that has just emerged to breathe, and forces it to plunge again beneath the surface, to escape the talons of this second assailant. The first eagle is now poising itself in the place where its mate formerly was, and rushes anew to force the quarry to make another plunge. By thus alternately gliding, in rapid and often repeated rushes, over the ill-fated bird, they soon fatigue it, when it stretches out its neck, swims deeply, and makes for the shore, in the hope of concealing itself among the rank

weeds. But this is of no avail, for the eagles follow it in all its motions, and the moment it approaches the margin, one of them darts upon it, and kills it in an instant, after which they divide the spoil.

“During spring and summer, the white-headed eagle, to procure sustenance, follows a different course, and one much less suited to a bird apparently so well able to supply itself without interfering with other plunderers. No sooner does the fish-hawk make its appearance along our Atlantic shores, or ascend our numerous and large rivers, than the eagle follows it, and, like a selfish oppressor, robs it of the hard-earned fruits of its labour. Perched on some tall summit, in view of the ocean, or of some water-course, he watches every motion of the osprey while on the wing. When the latter rises from the water, with a fish in its grasp, forth rushes the eagle in pursuit. He mounts above the fish-hawk, and threatens it by actions well understood, when the latter, fearing perhaps that its life is in danger, drops its prey. In an instant, the eagle, accurately estimating the rapid descent of the fish, closes his wings, follows it with the swiftness of thought, and the next moment grasps it. The prize is carried off in silence to the woods, and assists in feeding the ever-hungry brood of the eagle.

“This bird now and then procures fish himself, by pursuing them in the shallows of small creeks. I have witnessed several instances of this in the Perkioming Creek in Pennsylvania, where, in this manner, I saw one of them secure a number of red-fins, by wading briskly through the water, and striking at them with his bill. I have also observed a pair scrambling over the ice of a frozen pond, to get at some fish below, but without success.

“It does not confine itself to these kinds of food, but greedily devours young pigs, lambs, fawns, poultry, and the putrid flesh of carcasses of every description, driving off the vultures and carrion-crows, or the dogs, and keeping a whole party at defiance until it is satiated. It frequently gives chase to the vultures, and forces them to disgorge the contents of their stomachs, when

it alights and devours the filthy mass. A ludicrous instance of this took place near the city of Natchez, on the Mississippi. Many vultures were engaged in devouring the body and entrails of a dead horse, when a white-headed eagle accidentally passing by, the vultures all took to wing, one among the rest with a portion of the entrails partly swallowed, and the remaining part, about a yard in length, dangling in the air. The eagle instantly marked him, and gave chase. The poor vulture tried in vain to disgorge, when the eagle, coming up, seized the loose end of the gut, and dragged the bird along for twenty or thirty yards, much against its will, until both fell to the ground, when the eagle struck the vulture, and in a few moments killed it, after which he swallowed the delicious morsel.

“ I have heard of several attempts made by this bird to destroy children, but have never witnessed any myself, although I have little doubt of its having sufficient daring to do so.

“ The flight of the white-headed eagle is strong, generally uniform, and protracted to any distance at pleasure. Whilst travelling, it is entirely supported by equal easy flappings, without any intermission, in as far as I have observed it, by following it with the eye, or the assistance of a glass. When looking for prey, it sails with extended wings, at right angles to its body, now and then allowing its legs to hang at their full length. Whilst sailing, it has the power of ascending in circular sweeps, without a single flap of the wings, or any apparent motion either of them or of the tail; and in this manner it often rises until it disappears from the view, the white tail remaining longer visible than the rest of the body. At other times, it rises only a few hundred feet in the air, and sails off in a direct line, and with rapidity. Again, when thus elevated, it partially closes its wings, and glides downwards for a considerable space, when, as if disappointed, it suddenly checks its career, and reassumes its former steady flight. When at an immense height, and as if observing an object on the

ground, it closes its wings, and glides through the air with such rapidity as to cause a loud rustling sound, not unlike that produced by a violent gust of wind passing amongst the branches of trees. Its fall towards the earth can scarcely be followed by the eye on such occasions, the more particularly, that these falls, or glidings through the air, usually take place when they are least expected.

“ This bird has the power of raising from the surface of the water any floating object not heavier than itself. In this manner it often robs the sportsman of ducks which have been killed by him. Its audacity is quite remarkable. While descending the Upper Mississippi, I observed one of these eagles in pursuit of a green-winged teal. It came so near our boat, although several persons were looking on, that I could perceive the glancings of its eye. The teal, on the point of being caught, when not more than fifteen or twenty yards from us, was saved from the grasp of its enemy, one of our party having brought the latter down by a shot, which broke one of its wings. When taken on board, it was fastened to the deck of our boat by means of a string, and was fed with pieces of cat-fish, some of which it began to eat on the third day of its confinement. But, as it became a very disagreeable and dangerous associate, trying on all occasions to strike at some one with its talons, it was killed and thrown overboard.

“ When these birds are suddenly and unexpectedly approached or surprised, they exhibit a great degree of cowardice. They rise at once, and fly off very low, in zigzag lines, to some distance, uttering a hissing noise, not at all like their usual disagreeable imitation of a laugh. When not carrying a gun, one may easily approach them; but the use of that instrument being to appearance well known to them, they are very cautious in allowing a person having one to get near them. Notwithstanding all their caution, however, many are shot by approaching them under cover of a tree, on horseback, or in a boat. They do not possess the power of smelling gunpowder, as the crow and the

raven are absurdly supposed to do; nor are they aware of the effects of spring traps, as I have seen some of them caught by these instruments. Their sight, although probably as perfect as that of any bird, is much affected during a fall of snow, at which time they may be approached without difficulty.

“The white-headed eagle seldom appears in very mountainous districts, but prefers the low lands of the sea shores, those of our large lakes, and the borders of rivers. It is a constant resident in the United States, in every part of which it is to be seen. The roosts and breeding places of pigeons are resorted to by it, for the purpose of picking up the young birds that happen to fall, or the old ones when wounded. It seldom, however, follows the flocks of these birds when on their migrations.

“When shot at and wounded, it tries to escape by long and quickly repeated leaps, and, if not closely pursued, soon conceals itself. Should it happen to fall on the water, it strikes powerfully with expanded wings, and in this manner often reaches the shore, when it is not more than twenty or thirty yards distant. It is capable of supporting life without food for a long period. I have heard of some, which, in a state of confinement, had lived without much apparent distress for twenty days, although I cannot vouch for the truth of such statements, which, however, may be quite correct. They defend themselves in the manner usually followed by other eagles and hawks, throwing themselves backwards, and furiously striking with their talons at any object within reach, keeping their bill open, and turning their head with quickness to watch the movements of the enemy, their eyes being apparently more protruded than when unmolested.

“It is supposed that eagles live to a very great age,—some persons have ventured to say even a hundred years. On this subject, I can only observe, that I once found one of these birds, which, on being killed, proved to be a female, and which, judging by its appearance, must have been very old. Its tail and wing feathers

were so worn out, and of such a rusty colour, that I imagined the bird had lost the power of moulting. The legs and feet were covered with large warts — the claws and bill were much blunted — it could scarcely fly more than a hundred yards at a time, and this it did with a heaviness, and unsteadiness of motion, such as I never witnessed in any other bird of the species. The body was poor, and very tough. The eye was the only part which appeared to have sustained no injury. It remained sparkling, and full of animation; and, even after death, seemed to have lost little of its lustre. No wounds were perceivable on its body.

“ The white-headed eagle is seldom seen alone, the mutual attachment which two individuals form when they first pair, seeming to continue until one of them dies or is destroyed. They hunt for the support of each other, and seldom feed apart, but usually drive off other birds of the same species. They commence their amatory intercourse at an earlier period than any other land bird with which I am acquainted, generally in the month of December. At this time, along the Mississippi, or by the margin of some lake not far in the interior of the forest, the male and female birds are observed making a great bustle, flying about and circling in various ways, uttering a loud cackling noise, alighting on the dead branches of the tree on which their nest is already preparing, or in the act of being repaired, and caressing each other. In the beginning of January incubation commences. I shot a female, on the 17th of that month, as she sat on her eggs, on which the chicks had made considerable progress.

“ The nest, which in some instances is of great size, is usually placed on a very tall tree, destitute of branches to a considerable height, but by no means always a dead one. It is never seen on rocks. It is composed of sticks, from three to five feet in length, large pieces of turf, rank weeds, and Spanish moss in abundance, whenever that substance happens to be near. When finished, it measures from five to six feet in diameter; and so great is the accumulation of materials, that

it sometimes measures the same in depth, it being occupied for a great number of years in succession, and receiving some augmentation each season. When placed in a naked tree, between the forks of the branches, it is conspicuously seen at a great distance. The eggs, which are from two to four, more commonly two or three, are of a dull white colour, and equally rounded at both ends, some of them being occasionally granulated. Incubation lasts for more than three weeks; but I have not been able to ascertain its precise duration, as I have observed the female on different occasions sit for a few days in the nest, before laying the first egg. Of this I assured myself by climbing to the nest every day in succession, during her temporary absence,—a rather perilous undertaking when the bird is sitting.

“ I have seen the young birds when not larger than middle sized pullets. At this time, they are covered with a soft cottony kind of down, their bill and legs appearing disproportionately large. Their first plumage is of a grayish colour, mixed with brown of different depths of tint; and before the parents drive them off from the nest, they are fully fledged. I once caught three young eagles of this species, when fully fledged, by having the tree on which their nest was, cut down. It caused great trouble to secure them, as they could fly and scramble much faster than any of our party could run. They, however, gradually became fatigued, and at length were so exhausted as to offer no resistance, when we were securing them with cords. This happened on the border of Lake Pontchartrain, in the month of April. The parents did not think fit to come within gun-shot of the tree while the axe was at work.

“ The attachment of the parents to the young is very great, when the latter are yet of a small size; and to ascend to the nest at this time would be dangerous. But as the young advance, and, after being able to take wing and provide for themselves, are not disposed to fly off, the old birds turn them out, and beat them away from them. They return to the nest, however, to

roost, or sleep on the branches immediately near it, for several weeks after. They are fed most abundantly while under the care of the parents, which procure for them ample supplies of fish, either accidentally cast ashore, or taken from the fish-hawk, together with rabbits, squirrels, young lambs, pigs, opossums, or raccoons. Every thing that comes in the way is relished by the young family, as by the old birds.

"The young birds begin to breed the following spring, not always in pairs of the same age, as I have several times observed one of these birds in brown plumage mated with a full coloured bird, which had the head and tail pure white. I once shot a pair of this kind, when the brown bird (the young one) proved to be the female.

"This species requires at least four years before it attains the full beauty of its plumage when kept in confinement. I have known two instances in which the white of the head did not make its appearance until the sixth spring. It is impossible for me to say how much sooner this state of perfection is attained, when the bird is at full liberty, although I should suppose it to be at least one year, as the bird is capable of breeding the first spring after birth.

"The weight of eagles of this species varies considerably. In the males, it is from six to eight pounds, and in the females, from eight to twelve. These birds are so attached to particular districts, where they have first made their nest, that they seldom spend a night at any distance from the latter, and often resort to its immediate neighbourhood. Whilst asleep, they emit a loud hissing sort of suore, which is heard at the distance of a hundred yards, when the weather is perfectly calm. Yet, so light is their sleep, that the cracking of a stick under the foot of a person immediately awakens them. When it is attempted to smoke them while thus roosted and asleep, they start up and sail off without uttering any sound, but return next evening to the same spot.

“Before steam navigation commenced on our western rivers, these eagles were extremely abundant there, particularly in the lower parts of the Ohio, the Mississippi, and the adjoining streams. I have seen hundreds going down from the mouth of the Ohio to New Orleans, when it was not at all difficult to shoot them. Now, however, their number is considerably diminished, the game on which they were in the habit of feeding, having been forced to seek refuge from the persecution of man farther in the wilderness. Many, however, are still observed on these rivers, particularly along the shores of the Mississippi.”

6. *FALCO STANLEII*. — THE STANLEY HAWK.

AUDUBON, PLATE LXXI.

THIS is a new species, named in honour of Lord Stanley, president of the Linnæan Society.

7. *FALCO HYEMALIS* — THE WINTER HAWK.

AUDUBON, PLATE XXAVI. MALE AND FEMALE.

AUDUBON, as usual, gives an admirable portrait of this species; and this was the more necessary, seeing that Wilson's figure is bad. The following observations on the *physiognomy of birds*, occur in his account of the winter hawk:—

“Every species of bird is possessed of a certain, not always definable, cast of countenance, peculiar to itself. Although it undergoes changes necessary for marking the passions of the individual, its joy, its anger, its terror, or despondency, still it remains the same *specific look*. Hawks are perhaps more characteristically marked in this manner than birds of any other genus, being by nature intended for deeds of daring enterprise, and requiring a greater perfection of sight to enable them to distinguish their prey at great distances. To most persons the *family look* of particular species does not

appear so striking as to the student of nature, who examines her productions in the haunts which she has allotted to them. He perceives at a glance the differences of species, and when he has once bent his attention to an object, can distinguish it at distances which to the ordinary observer present merely a moving object, whether beast or bird. When years of constant observation have elapsed, it becomes a pleasure to him to establish the differences that he has found to exist among the various species of a tribe, and to display to others, whose opportunities have been more limited, the fruits of his research.

“ I hope, kind reader, you will not lay presumption to my charge, when I tell you, that I think myself somewhat qualified to decide in a matter of this kind ; or say that I go too far, when I assert, that the hawk which sails before me, at a distance so great, that a careless observer might be apt to fancy it something else, I can distinguish and name with as much ease as I should recognize an old friend by his walk, or his *tournure*. Independently of the cast of countenance so conspicuously distinctive of different species of birds, there are characters of separation in their peculiar notes, or cries ; and, if you add to these, the distinctions that exist in their habits, it will be easy for you, when you have looked at the plate of the winter falcon and that of the red-shouldered hawk, and have been told that their notes and manners differ greatly, to perceive that these birds, although confounded by some, are truly distinct.”

8. *FALCO TEMERARIUS*. — LE PETIT CAPORAL.

AUDUBON, PLATE LXXXV.

THIS is a new species, allied to the hobby. It is a native of Pennsylvania.

9. *FALCO HARLANI*. —BLACK WARRIOR.

AUDUBON, PLATE LXXXVI. MALE AND FEMALE.

THIS is also a new species, allied to the common buzzard, and named in honour of a promising young American naturalist.

GENUS III —*STRIX*.10. *STRIX NEBULOSA*. —BARRED OWL.

AUDUBON, PLATE XLVI. MALF.

WE cannot resist the temptation of gratifying our readers with Audubon's account of this bird:—

"Should you, kind reader, find it convenient or agreeable to visit the noble forests existing in the lower parts of the State of Louisiana, about the middle of October, when nature, on the eve of preparing for approaching night, permits useful dews to fall and rest on every plant, with the view of reviving its leaves, its fruits, or its lingering blossoms, ere the return of morn; when every night insect rises on buzzing wings from the ground, and the fire-fly, amidst thousands of other species, appears as if purposely to guide their motions through the sombre atmosphere; at the moment when numerous reptiles and quadrupeds commence their nocturnal prowlings, and the fair moon, empress of the night, rises peacefully on the distant horizon, shooting her silvery rays over the heavens and the earth, and, like a watchful guardian, moving slowly and majestically along; when the husbandman, just returned to his home, after the labours of the day, is receiving the cheering gratulations of his family, and the wholesome repast is about to be spread out for master and servants alike:—it is at this moment, kind reader, that were you, as I have said, to visit that happy country, your ear would suddenly be struck by the discordant screams of the barred owl. Its *whah-whah-whah-whah-aa*,

is uttered loudly, and in so strange and ludicrous a manner, that I should not be surprised were you, kind reader, when you and I meet, to compare these sounds to the affected bursts of laughter which you may have heard from some of the fashionable members of our own species.

“How often, when snugly settled under the boughs of my temporary encampment, and preparing to roast a venison steak or the body of a squirrel, on a wooden spit, have I been saluted with the exulting bursts of this nightly disturber of the peace, that, had it not been for him, would have prevailed around me, as well as in my lonely retreat! How often have I seen this nocturnal marauder alight within a few yards of me, exposing his whole body to the glare of my fire, and eye me in such a curious manner, that, had it been reasonable to do so, I would gladly have invited him to walk in and join me in my repast, that I might have enjoyed the pleasure of forming a better acquaintance with him! The liveliness of his motions, joined to their oddness, have often made me think that his society would be at least as agreeable as that of many of the buffoons we meet with in the world. But, as such opportunities of forming acquaintance have not existed, be content, kind reader, with the imperfect information which I can give you of the habits of this Sancho Pança of our woods.

“Such persons as conclude, when looking upon owls in the glare of day, that they are, as they then appear, extremely dull, are greatly mistaken. Were they to state, like Buffon, that woodpeckers are miserable beings, they would be talking as incorrectly; and, to one who might have lived long in the woods, they would seem to have lived only in their libraries.

“The barred owl is found in all those parts of the United States which I have visited, and is a constant resident. In Louisiana it seems to be more abundant than in any other State. It is almost impossible to travel eight or ten miles in any of the retired woods there, without seeing several of them, even in broad

day ; and, at the approach of night, their cries are heard proceeding from every part of the forest around the plantations. Should the weather be lowering, and indicative of the approach of rain, their cries are so multiplied during the day, and especially in the evening, and they respond to each other in tones so strange, that one might imagine some extraordinary fête about to take place among them. On approaching one of them, its gesticulations are seen to be of a very extraordinary nature. The position of the bird, which is generally erect, is immediately changed. It lowers its head, and inclines its body, to watch the motions of the person beneath, throws forward the lateral feathers of its head, which thus has the appearance of being surrounded by a broad ruff, looks towards him as if half blind, and moves its head to and fro in so extraordinary a manner, as almost to induce a person to fancy that part dislocated from the body. It follows all the motions of the intruder with its eyes ; and, should it suspect any treacherous intentions, flies off to a short distance, alighting with its back to the person, and immediately turning about with a single jump, to recommence its scrutiny. In this manner, the barred owl may be followed to a considerable distance, if not shot at, for to halloo after it does not seem to frighten it much. But if shot at, and missed, it removes to a considerable distance, after which its *whah-whah-whah* is uttered with considerable pomposity. This owl will answer the imitation of its own sounds, and is frequently decoyed by this means.

“ The flight of the barred owl is smooth, light, noiseless, and capable of being greatly protracted. I have seen them take their departure from a detached grove in a prairie, and pursue a direct course towards the skirts of the main forest, distant more than two miles, in broad daylight. I have thus followed them with the eye until they were lost in the distance, and have reason to suppose that they continued their flight until they reached the woods. Once, whilst descending the Ohio, not far from the well known *Cave-in-rock*,

about two hours before sunset, in the month of November, I saw a barred owl teased by several crows, and chased from the tree in which it was. On leaving the tree, it gradually rose in the air, in the manner of a hawk, and at length attained so great a height, that our party lost sight of it. It acted, I thought, as if it had lost itself, now and then describing small circles, and flapping its wings quickly, then flying in zigzag lines. This being so uncommon an occurrence, I noted it down at the time. I felt anxious to see the bird return towards the earth, but it did not make its appearance again. So very lightly do they fly, that I have frequently discovered one passing over me, and only a few yards distant, by first seeing its shadow on the ground, during clear moonlight nights, when not the faintest rustling of its wings could be heard.

" Their power of sight during the day seems to be rather of an equivocal character, as I once saw one alight on the back of a cow, which it left so suddenly afterwards, when the cow moved, as to prove to me that it had mistaken the object on which it had perched for something else. At other times, I have observed, that the approach of the gray squirrel intimidated them, if one of these animals accidentally jumped on a branch close to them, although the owl destroys a number of them during the twilight. It is for this reason, kind reader, that I have represented the barred owl gazing in amazement at one of the squirrels placed only a few inches from him.

" The barred owl is a great destroyer of poultry, particularly of chickens when half grown. It also secures mice, young hares, rabbits, and many species of small birds, but is especially fond of a kind of frog of a brown colour, very common in the woods of Louisiana. I have heard it asserted that this bird catches fish, but never having seen it do so, and never having found any portion of fish in its stomach, I cannot vouch for the truth of the report.

" About the middle of March, these owls begin to lay their eggs. This they usually do in the hollows of trees, on the dust of the decomposed wood. At other

times they take possession of the old nest of a crow, or a red-tailed hawk. In all these situations I have found their eggs and young. The eggs are of a globular form, pure white, with a smooth shell, and are from four to six in number. So far as I have been able to ascertain, they rear only one brood in a season. The young, like those of all other owls, are at first covered with a downy substance, some of which is seen intermixed with and protruding from the feathers, some weeks after the bird is nearly fledged. They are fed by the parents for a long time, standing perched, and emitting a hissing noise in lieu of a call. This noise may be heard in a calm night, for fifty, or probably a hundred yards, and is by no means musical. To a person lost in a swamp, it is, indeed, extremely dismal.

"The plumage of the barred owl differs very considerably, in respect to colour, in different individuals, more so among the males. The males are also smaller than the females, but less so than in some other species. During the severe winters of our Middle Districts, those that remain there suffer very much; but the greater number, as in other species, remove to the Southern States. When kept in captivity, they prove excellent mousers.

"The antipathy shewn to owls by every species of day bird is extreme. They are followed and pursued on all occasions; and although few of the day birds ever prove dangerous enemies, their conduct towards the owls is evidently productive of great annoyance to them. When the barred owl is shot at and wounded, it snaps its bill sharply and frequently, raises all its feathers, looks towards the person in the most uncouth manner, but, on the least chance of escape, moves off in great leaps with considerable rapidity.

"The barred owl is very often exposed for sale in the New Orleans market. The Creoles make *gumbo* of it, and pronounce the flesh palatable."

11. *STRIX VIRGINIANA*. — THE GREAT HORNED OWL.

AUDUBON, PLATE LXI. MALE AND FEMALE.

WE recommend to our readers Audubon's admirable account of the natural history of this species.

12. *PICUS PRINCIPALIS*. — THE IVORY-BILLED WOODPECKER.

AUDUBON, PLATE LXVI. MALE AND FEMALE.

"I HAVE always," says Audubon, "imagined, that in the plumage of the beautiful ivory-billed woodpecker, there is something very closely allied to the style of colouring of the great Vandyke. The broad extent of its dark glossy body and tail, the large and well-defined white markings of its wings, neck, and bill, relieved by the rich carmine of the pendent crest of the male, and the brilliant yellow of its eye, have never failed to remind me of some of the boldest and noblest productions of that inimitable artist's pencil. So strongly, indeed, have these thoughts become ingrafted in my mind, as I gradually obtained a more intimate acquaintance with the ivory-billed woodpecker, that whenever I have observed one of these birds flying from one tree to another, I have mentally exclaimed, "There goes a Vandyke!" This notion may seem strange, perhaps ludicrous, to you, good reader, but I relate it as a fact, and whether or not it may be found in accordance with your own ideas, after you have inspected the plate in which is represented this great chieftain of the woodpecker tribe, is perhaps of little consequence."

The natural history of this bird, given by Audubon, will be read with delight by readers of every description.

13. *ICTERUS PECORIS.*

THE COW-PEN BIRD. — COW BUNTING OF WILSON.

AUDUBON, PLATE XCIX. MALE AND FEMALE.

As preliminary to his amusing account of this bird, Audubon beautifully remarks :—

“The works of nature are evidently perfect in all their parts. From the manifestations of consummate skill everywhere displayed, we must infer that the intellect which planned the grand scheme, is infinite in power ; and even when we observe parts or objects which to us seem unnecessary, superfluous, or useless, it would be more consistent with the ideas which we ought to have of our own feeble apprehension, to consider them as still perfect, to have been formed for a purpose, and to execute their intended function, than to view them as abortive and futile attempts.

“The seed is dropped on the ground. It imbibes moisture, swells, and its latent principle of life receiving an impulse, slowly unfolds. Its radicle shoots down into the earth, its plumule rises toward the sky. The first leaflets appear, and, as we watch its progress, we see it assuming size and strength. Years pass on, and it still enlarges. It produces flowers and fruits, and gives shelter to multitudes of animated beings. At length, it stands the glory of the forest, spreading abroad its huge arms, covering with its dense foliage the wild animals that retreat to it for protection from the sun and the rain. Centuries after its birth, the stately tree rears its green head to the sky. At length symptoms of decay begin to manifest themselves. The branches wither, the core dies and putrefies. Gray and shaggy lichens cover its trunk and limbs. The woodpecker resorts to it for the purpose of procuring the insects which find shelter beneath its decayed bark. Blackness spreads over the heavens, the muttering of the thunder is heard. Suddenly there comes on the ear the bickering noise of the whirlwind, which scatters

the twigs and the foliage around, and meeting in its path the patriarch of the forest, lays him prostrate on the ground. For years the massy trunk lies extended on the earth; but it is seen gradually giving way. The summer's sun and the winter's frost crumble it into dust, which goes to augment the soil. And thus has it finished its course.

"Look again at the egg of the bird, dropped on its curious bed, the construction of which has cost the parent bird many labours and anxieties. It also is a seed, but it gives rise to a very different object. Fostered by the warmth imparted by the parent bird, the germ which it contains swells into life, and, at length bursting its fragile enclosure, comes tottering into existence. To sustain the life and contribute to the development of this helpless being, the mother issues in quest of food, which she carefully places in its open throat. Day after day it acquires new development under the fostering care of its nurse, until at length, invested with all the powers which nature intended to bestow upon it, it spreads its pinions to the breeze, and sallies forth to perform the many offices for which it is destined.

"How often have I watched over the little bird in its nest, and marked the changes which day after day it exhibited; the unfolding of its first scanty covering of down, the sprouting of its plumelets, the general enlargement of all its parts! With what pleasure have I viewed the development of its colouring and the early manifestations of its future habits!"

14. *CORVUS BULLOCKII*, AUDUBON.

GARRULUS ULTRAMARINUS OF BONAP.—THE COLUMBIA JAY.

AUDUBON, PLATE XCVI.

THE general colour of this new species of crow is bright blue, with purple reflections; the foreneck and anterior part of the breast, black; the rest of the under parts, white; length, thirty-one inches; across the

wings, twenty-six. Audubon, when speaking of this fine bird, has the following remarks:—

“ The genus *corvus* consists of birds which differ considerably in their appearance and manners. This circumstance has given rise to various separations and groupings. It may, in fact, be considered analogous to the great genera *Falco*, *Psittacus*, and *Columba*, which, although the species composing them exhibit great diversity, may be allowed to retain their integrity, because the gradations between the species are so minute, that each group presents an uninterrupted series. Were one to compare the golden eagle with the swallow-tailed hawk, the red macaw with the ground parrot of New Holland, or the great crested pigeon with the turtle dove, he might doubtless find reasons for separating these birds into genera, could he but forget that the intermediate gradations are to be seen. It is so with the crows and jays. The former are characterized by a certain gravity of aspect; their flight is regular, protracted, and performed by easy flappings and sailings; they frequent open places, and feed on almost all kinds of food indiscriminately; their cry is a dull croak, or scream. The latter are much smarter in their appearance, more lively in their motions; their flight is less protracted, and performed by short flappings; they frequent woods and thickets, and live chiefly on fruits; and their notes are emitted in noisy chatterings. The bill of the crows is large, robust, cultriform, covered at the base with long, stiff, closely adpressed, reversed, bristly feathers; that of some of the jays is much smaller, not robust, and approaching to the form of that of thrushes and nut-crackers, and the basirostral feathers are diminished in size and rigidity. The crows have shortish, even or rounded tails, with long and sometimes rather sharp wings. The jays have the tail often greatly elongated and cuneiform or graduated, with short, much rounded, concave wings. Numerous other contrasts are afforded,—the crows, for example, being generally dull and uniform in their colours, the jays variegated and often

brilliant. All these circumstances I intend to discuss in another work, and in the mean time retain the usual generic name for the present splendid species, which has the bill of nearly the same form as the true crows, combined with the elongated tail, and lively colouring of the jays.

"Were I to relate to you, good reader, the various accounts which I have heard respecting this splendid bird, I should have enough to say; but as I have resolved to confine myself entirely to the results of my own observation, I must for the present remain silent on the subject.

"The specimen from which the drawings were taken was presented to me by a friend who had received it from the Columbia River, and is the only individual represented in the volume which I did not myself procure on the spot. However, as I expect to ramble again through our vast forests and extensive territories, I may yet be enabled to give you a full account of this beautiful bird, which, from the splendour of its plumage, deserves all the attention of the naturalist. In the mean time, I adjoin a notice respecting it, with which I have lately been favoured by my friend, the Prince of Musignano: 'Le superbe geai, dont vous me parlez, est sans doute l'oiseau que Wagler a fait connaître le premier, sous le nom de *Pica Bullocki*, et que Temminck a figuré dans ses planches coloriées, sous celui de *Garula Gubernatrix*. Son nom légitime, suivant mes principes, sera *Garrulus Bullocki*, mais vous avez raison de dire qu'il ne se trouve pas dans mon Synopsis: ce n'est que par votre lettre que j'ai appris qu'il se trouvait dans le territoire des Etats-Unis. Jusqu'à présent, on ne l'avait trouvé qu'au Mexique et à la Californie. Il n'est pas étonnant qu'il se retrouve sur la rivière Columbia. Mais comment l'avez-vous obtenu et avez-vous pu le dessiner vivant? Trois autres espèces de geais, qui ne sont pas dans mon Synopsis, habitent l'extrémité nord de l'Amérique, et il est probable, qu'outre votre superbe geai commandeur,

plusieurs autres des especes Mexicaines se retrouvent dans sa partie occidentale.’”

15. *CORVUS CORAX*, LINNÆUS. — THE RAVEN.

THIS well known bird, common to the four quarters of the globe, abounds in the fur countries, and visits the remotest islands of the polar seas. * Richardson remarks, “It frequents the barren grounds even in the most intense winter colds, its movements being directed in a great measure by those of the herds of rein-deer, musk-oxen, and bison, which it follows, ready to assist in devouring such as are killed by beasts of prey or by accident. No sooner has a hunter slaughtered an animal, than these birds are seen coming from various quarters to feast on the offal; and considerable numbers constantly attend at the fishing stations, where they shew equal boldness and rapacity. The experienced native, when he sees from afar a flock of ravens wheeling in small circles, knows that a party of his countrymen, well provided with venison, are encamped on the spot, or that a band of wolves are preying upon the carcass of some of the larger quadrupeds; and pushes on briskly, in the certain prospect of having his wants supplied. The thievish habits of a tame raven† are well known; but it is remarkable, that, inhabiting in a wild state the most secluded and worst peopled districts of America, it

* Captain James C. Ross remarks, that the raven was found in the most northern part of the Arctic regions visited by the exploratory expedition. A pair took up their residence in the high cliffs of Port Bowen, and occasionally approached the ships in search of food. During the winter, they were frequently observed to have a white ring round the neck, caused by the freezing of the vapour of their breath, and giving them a very singular appearance. Winter produced no effect on their plumage, nor did they differ in any respect from the European bird.

† Ravens have been taught to articulate short sentences as distinctly as any parrot. One now in the possession of Mr Henslow, of St Albans, speaks so distinctly, that, upon first hearing it, we were actually deceived in thinking it was a human voice.

should exhibit the same disposition to carry off shining metallic bodies and other articles, totally unfit either for food or to be used in the construction of its nest. Mr Kendall, in crossing the height of land which divides the waters that flow towards Hudson's Bay from those which fall into the Arctic Sea, saw a raven flying off with something in his claws, pursued by a number of his companions. The flock being fired at, the object of contention was dropped, and proved to be the lock of a chest!"*

* "With the exception of the snipe, no bird seems more universally spread over the surface of our globe than the raven, inhabiting every zone, the hot, the temperate, and the severe; feeding upon and removing noxious substances from the earth, of which it obtains intimation by means of a faculty we have little conception of. Sight it cannot be; and we know not of any fœtor escaping from an animal, previous to putrescence, so subtle as to call these scavengers of nature from the extremity of one country to that of another; for it is manifest, from the height which they preserve in their flight, and the haste they are making, that their departure has been from some far distant station, having a remote and urgent object in contemplation.

"In England, the raven does not seem to abound; but it is most common on the shores of harbours, or near great rivers, where animal substances are more frequently to be met with than in inland places. In Greenland and Iceland, where putrescent fishy substances abound, they appear to be almost domesticated. Horace calls the raven '*Annosa Cornix*;' and in a tame state it has attained a very long life. How long extended its existence may be, when roaming in an unrestricted state, we have no means of ascertaining. This liberty may be most favourable to longevity; yet, from the numerous contingencies attending the condition of these creatures, it is probable that few of them live out all their days, so as to become the '*bird of ages*.' However, the supposed longevity they have attained, their frequent mention and agency in Holy Writ, the obscure knowledge we possess of their powers and motives, with the gravity of their deportment, like an '*all knowing bird*,' have acquired for them, from very remote periods, the veneration of mankind. The changes of our manners and ideas, in respect to many things, have certainly deprived them of much of this reverence; yet the almost supernatural information which they obtain of the decrease, or approaching dissolution, of an animal, claims still some admiration for them. This supposed faculty of

16. *CAPRIMULGUS CAROLINENSIS*. — CHUCK-WILL'S-WIDOW.

AUDUBON, PLATE LII.

AUDUBON remarks of this bird, that if the eggs in the nest are handled, the parents remove them to some other part of the wood. "This singular occurrence," says he, "has as much occupied my thoughts as the equally singular manner in which the cow-bunting deposits her eggs, which she does, like the common cuckoo of Europe, one by one, in the nests of other birds, of different species from her own. I have spent much time in trying to ascertain in what manner the chuck-will's-widow removes her eggs or young, particularly as I found, by the assistance of an excellent dog, that neither the eggs nor the young were to be met with within at least a hundred yards from the spot where they at first lay. The negroes, some of whom pay a good deal of attention to the habits of birds and quadrupeds, assured me that these birds push the eggs or young with their bill along the ground. Some farmers, without troubling themselves much about the matter, imagined the transportation to be performed under the wings of the old bird. The account of the negroes appearing to me more likely to be true than

'smelling death,' formerly rendered their presence, or even their voice, ominous to all, as

'The hateful messengers of heavy things,
Of death and dolour telling,'

and the universal sound of their harsh croak, still, when illness is in the house, with some timid and affectionate persons, brings old fancies to remembrance, savouring of terror and alarm. I am no friend to the superstition of converting natural transactions or occasional events into signs and indications of coming things. Superstitions are wearing out, and shortly will waste away, and be no more heard of; but, I fear, in their place, *desm, infidelity, impiety*, have started up, the offspring of intuitive wisdom — the first belief arises from weakness and ignorance; the latter disbelief is ingratitude, pride, wickedness." — *Journal of a Naturalist*.

that of the farmers, I made up my mind to institute a strict investigation of the matter. The following is the result:—

“When the chuck-will’s-widow, either male or female, (for each sits alternately,) has discovered that the eggs have been touched, it ruffles its feathers, and appears extremely dejected for a minute or two, after which it emits a low murmuring cry, scarcely audible to me, as I lay concealed at a distance of not more than eighteen or twenty yards. At this time I have seen the other parent reach the spot, flying so low over the ground that I thought its little feet must have touched it, as it skimmed along, and after a few low notes and some gesticulations, all indicative of great distress, take an egg in its large mouth, the other bird doing the same, when they would fly off together, skimming closely over the ground, until they disappeared among the branches and trees. But to what distance they remove their eggs, I have never been able to ascertain; nor have I ever had an opportunity of witnessing the removal of the young. Should a person, coming upon the nest when the bird is sitting, refrain from touching the eggs, the bird returns to them, and sits as before. This fact I have also ascertained by observation.”

17. *HIRUNDO LUNIFRONS.*

WHITE-FRONTED, OR CLIFF SWALLOW.

“Its clustered nests are of frequent occurrence, on the faces of the rocky cliffs of the barren grounds, and they are not uncommon throughout the whole course of the Slave and Mackenzie Rivers. On the 25th of June, in the year 1825, a number of them made their first appearance at Fort Chepewyan, and built their nests under the eaves of the dwelling-house, which are about six feet above a balcony, that extends the whole length of the building, and is a frequented promenade. They had thus to graze the heads of the passengers, on entering their nests, and were moreover exposed to the curiosity and depredations of the children, to whom

they were novelties; yet they preferred the dwelling-house to the more lofty eaves of the storehouses, and in the following season returned with augmented numbers to the same spot. Fort Chepewyan has existed for many years, and trading posts, though far distant from each other, have been established in the fur countries for a century and a half; yet this, as far as I could learn, is the first instance of this species of swallow placing itself under the protection of man within the widely extended lands north of the great lakes.* What cause could have thus suddenly called into action that apparent confidence in the human race with which the Framer of the universe has endowed this species, in common with others of the swallow tribe? It has been supposed, that birds frequenting desert countries, and unaccustomed to annoyance from man, would approach him fearlessly, or at least be less shy than those inhabiting thickly peopled districts, where they are daily exposed to the attacks of the great destroyer of their tribes. But although this may be true of some families of birds, it is far from being generally the case. On the contrary, the small birds of the fur countries, which are never objects of pursuit, and scarcely even of notice to the Indian hunter, are shy, retiring, and distrustful, their habits contrasting strongly with the boldness and familiarity of the sparrows, that are persecuted to death by every idle boy in Europe. Nay, some species, which are bold enough during their winter residence in the United States, evince great timidity in the northern regions, where the raising their progeny occupies their whole time. In like manner, the redbreast of Europe, familiar as it is in winter, sequesters itself with the greatest care in the breeding season. The question, however,

* The late Governor De Witt Clinton, has given a very interesting history of the closely resembling species *H. fudea*, which about sixteen years ago began to build its nests on the walls of houses in the Western States, and has, every succeeding summer, been advancing further to the eastward—*Vide Ann. Lyc. New York*, i, p. 156.

recurs,— what is the peculiarity of economy which leads one species of bird to conceal its nest with the most extraordinary care and address, and another to place its offspring in the most exposed situation it can select ?”—
Richardson.

18. *HIRUNDO FULVA*, VIEILL.

THE REPUBLICAN, OR CLIFF SWALLOW.

AUDUBON, PLATE LXVIII.

IN his account of this species, Audubon has the following observations on the migration of swallows :—

“ Being extremely desirous of settling the long agitated question respecting the migration, or supposed torpidity of swallows, I embraced every opportunity of examining their habits, carefully noted their arrival and disappearance, and recorded every fact connected with their history. After some years of constant observation and reflection, I remarked, that among all the species of migratory birds, those that remove farthest from us, depart sooner than those which retire only to the confines of the United States; and, by a parity of reasoning, those that remain later return earlier in the spring. These remarks were confirmed, as I advanced towards the southwest, on the approach of winter; for I there found numbers of warblers, thrushes, &c. in full feather and song. It was also remarked, that the *Hirundo viridis* of Wilson, (called by the French of Lower Louisiana, *Le Petit Martinet à ventre blanc*,) remained about the city of New Orleans later than any other swallow. As immense numbers of them were seen during the month of November, I kept a diary of the temperature from the third of that month, until the arrival of *Hirundo purpurea*. The following notes are taken from my journal; and as I had excellent opportunities, during a residence of many years in that country, of visiting the lakes to which these swallows were said to resort, during the transient frosts, I present them with confidence ?

“ November 11.— Weather very sharp, with a heavy white frost. Swallows in abundance during the whole

day. On inquiring of the inhabitants if this was a usual occurrence, I was answered in the affirmative by all the French and Spaniards. From this date to the 22d, the thermometer averaged 65°, the weather generally a drizzly fog. Swallows playing over the city in thousands.

“ *November 25.*—Thermometer this morning at 30° Ice in New Orleans a quarter of an inch thick. The swallows resorted to the lee of the Cypress Swamp, in the rear of the city. Thousands were flying in different flocks. Fourteen were killed at a single shot, all in perfect plumage, and very fat. The markets were abundantly supplied with these tender, juicy, and delicious birds. Saw swallows every day; but remarked them more plentiful the stronger the breeze blew from the sea.

“ *December 20.*—The weather continues much the same. Foggy and drizzly mist. Thermometer averaging 63°.

“ *January 14.*—Thermometer 42°. Weather continues the same. My little favourites constantly in view.

“ *January 28.*—Thermometer at 40°. Having seen the *Hirundo virens* continually, and the *H. purpurea*, or purple martin, beginning to appear, I discontinued my observations.

“ During the whole winter, many of them retired to the holes about the houses; but the greater number resorted to the lakes, and spent the night among the branches of *Myrica cerifera*, the *Cirier*, as it is termed by the French settlers.

“ About sunset, they began to flock together, calling to each other for that purpose; and, in a short time, presented the appearance of clouds moving towards the lakes, or the mouth of the Mississippi, as the weather and wind suited. Their aerial evolutions before they alight, are truly beautiful. They appear at first as if reconnoitring the place, when, suddenly throwing themselves into a vortex of apparent confusion, they descend spirally with astonishing quickness, and very much resemble a *trombe*, or water spout. When within

a few feet of the *ciriers*, they disperse in all directions, and settle in a few moments. Their twittering, and the motions of their wings, are, however, heard during the whole night. As soon as the day begins to dawn, they rise, flying low over the lakes, almost touching the water for some time, and then rising, gradually move off in search of food, separating in different directions. The hunters who resort to these places destroy great numbers of them, by knocking them down with light paddles, used in propelling their canoes."

19. *MUSCICAPA BONAPARTII*. — BONAPARTE'S FLYCATCHER.

AUDUBON, PLATE V.

This beautiful new species, discovered by Audubon, is dedicated to Prince Charles Bonaparte.

20. *MUSCICAPA SELBYI*. — SELBY'S FLYCATCHER.

AUDUBON, PLATE IX.

Of this rare species, named in honour of Mr Selby, the distinguished ornithologist, a beautiful figure is given by Audubon.

21. *MUSCICAPA TRAILLI*. — TRAILL'S FLYCATCHER.

AUDUBON, PLATE XLV. — MALE.

This new species, dedicated to a learned and excellent man, Dr Traill of Liverpool, although nearly allied to the green-crested flycatcher, differs from it in notes, habits, as well as the districts in which it resides.

22. *TURDUS LUDOVICIANUS*. — THE LOUISIANA WATER THRUSH.

AUDUBON, PLATE XIX. — MALE.

This interesting species, added to the fauna of North America by Audubon, differs in colour and *habits* from the common water thrush, described by Wilson. "Much and justly as the song of the nightingale is admired, I am inclined," says Audubon, "after having often listened to it, to pronounce it in no degree superior to that of

the Louisiana water thrush. The notes of the latter bird are as powerful and mellow, and at times as varied. This bird is a resident of the low lands of Louisiana and the Mississippi. It may be observed perched on a low bough, scarcely higher than the top of the canes, in an erect attitude, swelling its throat, and repeating, several times in succession, sounds so approaching the whole two octaves of a good piano-forte, as almost to induce the hearer to imagine that the keys of that instrument are used on the occasion. The bird begins on the upper key, and progressively passes from one to another until it reaches the base note, this last frequently being lost when there is the least agitation in the air. Its song is heard even in the winter when the weather is calm and warm."

Voices of Birds.

Although the beautiful remarks of Wilson on the *song of birds* are already before our readers, we doubt not they will enjoy the following observations of a universally admired popular modern English writer on the same subject:—

"Rural sounds, the voices, the language of the wild creatures, as heard by the naturalist, belong to, and are in concord with, the country only. Our sight, our smell, may perhaps be deceived for an interval by conservatories, horticultural arts, and bowers of sweets; but our hearing can in no way be beguiled by any semblance of what is heard in the grove or the field. The hum, the murmur, the medley of the mead, are peculiarly its own, admit of no imitation, and distinctly notify the various periods of the year, with an accuracy as certain as they are detailed in our calendars. The season of spring is always announced as approaching by the notes of the rookery, by the jangle or wooing accents of the dark frequenters of its trees; and that time having passed away, these contentions and cadences are no longer heard. The cuckoo then comes, and informs us that spring has arrived,—that he has journeyed to us, borne by gentle gales in sunny days,—that

fragrant flowers are in the copse and the mead, and all things telling of gratulation and of joy. The children mark this well known sound—spring out, and “cuckoo! cuckoo!” as they gambol down the lane. The very ploughboy bids him welcome in the early morn. It is hardly spring without the cuckoo’s song; and, having told his tale, he has voice for no more—is silent or away.

“Then comes the dark, swift winged martin, glancing through the air, that seems afraid to visit our uncertain clime: he comes, though late, and hurries through his business here, eager again to depart, all day long in agitation and precipitate flight. The bland zephyrs of the spring have no charms with them, but, basking and careering in the sultry gleams of June and July, they associate in throngs, and, screaming, dash round the steeple or the ruined tower, to serenade their nesting mates, and glare and heat are in their train. When the fervour of summer ceases, this bird of the sun will depart. The evening robin, from the summit of some leafless bough, or projecting point, tells us that autumn is come, and brings matured fruits, chilly airs, and sober hours, and he, the lonely minstrel now that sings, is understood by all. These four birds thus indicate a separate season, have no interference with the intelligence of the other, nor could they be transposed without the loss of all the meaning they convey, which no contrivance of art could supply, and, by long association, they have become identified with the period, and in peculiar accordance with the time.

“We note birds in general more from their voices than their plumage, for the carols of spring may be heard involuntarily, but to observe the form and decoration of these creatures requires an attention not always given. Yet we have some native birds beautifully and conspicuously feathered,—the goldfinch, the chaffinch, the wagtails, are all eminently adorned, and the fine gradations of sober browns in several others are very pleasing. Those sweet sounds, called the song of birds, proceed only from the male, and, with a few

exceptions, only during the season of incubation. Hence the comparative quietness of our summer months, when this care is over, except from accidental causes, where a second nest is formed, few of our birds bringing up more than one brood in the season. The redbreast, blackbird, and thrush, in mild winters, may continually be heard, and form exceptions to the general procedure of our British birds; and we have one little bird, the wood lark, (*alauda arborea*,) that, in the early parts of the autumnal months, delights us with its harmony, and its carols may be heard in the air commonly during the calm sunny mornings of this season. They have a softness and quietness perfectly in unison with the sober, almost melancholy, stillness of the hour. The skylark also sings now, and its song is very sweet, full of harmony, cheerful as the blue sky and gladdening beam in which it circles and sports, and known and admired by all; but the voice of the woodlark is local, not so generally heard—from its softness must almost be listened for to be distinguished, and has not any pretensions to the hilarity of the former. This little bird sings likewise in the spring; but, at that season, the contending songsters of the grove, and the variety of sound proceeding from every thing that has utterance, confuse and almost render inaudible the placid voice of the woodlark. It delights to fix its residence near little groves and copses, or quiet pastures, and is a very unobtrusive bird, not uniting in companies, but associating in its own little family parties only, feeding in the woodlands on seeds and insects. Upon the approach of man it crouches close to the ground, then suddenly darts away, as if for a distant flight, but settles again almost immediately. This lark will often continue its song, circle in the air, a scarcely visible speck, by the hour together; and the vast distance from which its voice reaches us in a calm day is almost incredible. In the scale of comparison it stands immediately below the nightingale in melody and plaintiveness, but compass of voice is given to the linnet, a bird of very inferior powers. The strength of the larynx, and of the

muscles of the throat in birds, is infinitely greater than in the human race. The loudest shout of the peasant is but a feeble cry compared with that of the golden-eyed duck, the wild goose, or even this lark. The sweet song of this poor little bird, with a fate like that of the nightingale, renders it an object of capture and confinement, which few of them comparatively survive. I have known our country bird-catchers take them by a very simple but effectual method. Watching them to the ground, the wings of a hawk, or of the brown owl, stretched out, are drawn against the current of air by a string, as a paper kite, and made to flutter and librate like a kestrel over the place where the woodlark has lodged, and so intimidates the bird, that it remains crouching and motionless as a stone on the ground: a hand net is brought over it, and it is caught.

“ From various little scraps of intelligence scattered through the sacred and ancient writings, it appears certain, as it was reasonable to conclude, that the notes now used by birds, and the voices of animals, are the same as uttered by their earliest progenitors. The language of man, without any reference to the confusion accomplished at Babel, has been broken into innumerable dialects, created or compounded as his wants occurred, or his ideas prompted, or obtained by intercourse with others, as mental enlargement or novelty necessitated new words to express new sentiments. Could we find a people from Japan or the Pole, whose progress in mind has been stationary, without increase of idea, from national prejudice or impossibility of communication with others, we probably should find little or no alteration in the original language of that people; so, by analogy of reasoning, the animal having no idea to prompt, no new want to express, no converse with others, (for a note caught and uttered merely is like a boy mocking the cuckoo,) so no new language is acquired. With civilized man, every thing is progressive; with animals, where there is no mind, all is stationary. Even the voice of one species of birds, except in particular cases, seems not to be attended to by another species.

That peculiar call of the female cuckoo, which assembles so many contending lovers, and all the various amatorial and caressing language of others, excites no influence generally, that I am aware of: with all, but the individual species, it is a dialect unknown. I know but one note which animals make use of, that seems of universal comprehension, and this is the signal of danger. The instant that it is uttered, we hear the whole flock, though composed of various species, repeat a separate moan, and away they all scuttle into the bushes for safety. The reiterated *twink twink* of the chaffinch, is known by every little bird as information of some prowling cat or weasel. Some give the maternal hush to their young, and mount to inquire into the jeopardy announced. The wren, that tells of perils from the hedge, soon collects about her all the various inquisitive species within hearing, to survey and ascertain the object, and add their separate fears. The swallow, that, shrieking, darts in devious flight through the air when a hawk appears, not only calls up all the hirundines of the village, but is instantly understood by every finch and sparrow, and its warning attended to. As Nature, in all her ordinations, had a fixed design and foreknowledge, it may be that species had a separate voice assigned it, that each might continue as created, distinct and unmixed; and the very few deviations and admixtures that have taken place, considering the lapse of time, association, and opportunity, united with the prohibition of continuing accidental deviations, are very remarkable, and indicate a cause and original motive. That some of the notes of birds are as language, designed to convey a meaning, is obvious, from the very different sounds uttered by these creatures at particular periods. The spring voices become changed as summer advances, and the requirements of the early season have ceased; the summer excitements, monitions, informations, are not needed in autumn, and the notes conveying such intelligences are no longer heard. The periodical calls of animals, croaking of frogs, &c. afford the same reasons for concluding, that the sound of their voices by ele-

vation, depression, or modulation, conveys intelligence equivalent to an uttered sentence. The voices of birds seem applicable, in most instances, to the immediate necessities of their condition; such as the sexual call, the invitation to unite when dispersed, the moan of danger, the shriek of alarm, the notice of food. But there are other notes, the designs and motives of which are not so obvious. One sex only is gifted with the power of singing, for the purpose, as Buffon supposed, of cheering his mate during the period of incubation; but this idea, gallant as it is, ~~has such slight foundation in probability, that it needs no~~ ~~confutation~~; and after ~~all~~, perhaps, we must conclude, that, listened to, admired, and pleasing, as the voices of many birds are, either for their intrinsic melody, or from association, we are uncertain what they express, or the object of their song. The singing of most birds seems entirely a spontaneous effusion, produced by no exertion, or occasioning no lassitude in muscle, or relaxation of the parts of action. In certain seasons and weather, the nightingale sings all day, and most part of the night; and we never observe that the powers of song are weaker, or that the notes become harsh and untunable, after all these hours of practice. The song thrush, in a mild moist April, will commence his tune early in the morning, pipe unceasingly through the day, yet, at the close of eve, when he retires to rest, there is no obvious decay of his musical powers, or any sensible effort required to continue his harmony to the last. Birds of one species sing in general very like each other, with different degrees of execution. Some countries may produce finer songsters, but without great variation in the notes. In the thrush, however, it is remarkable, that there seems to be no regular notes, each individual piping a voluntary of his own. Their voices may always be distinguished amid the choristers of the copse; yet some one performer will more particularly engage attention by a peculiar modulation, or tune; and should several stations of these birds be visited in the same morning, few or none

probably will be found to preserve the same round of notes; whatever is uttered seeming the effusion of the moment. At times a strain will break out perfectly unlike any preceding utterance, and we may wait a long time without noticing any repetition of it. During one spring an individual song thrush, frequenting a favourite copse, after a certain round of tune, trilled out most regularly some notes that conveyed so clearly the words, *lady-bird! lady-bird!* that every one remarked the resemblance. He survived the winter, and in the ensuing season the *lady-bird! lady-bird!* was still the burden of our evening song; it then ceased, and we never heard this pretty modulation more. Though merely an occasional strain, yet I have noticed it elsewhere; it thus appearing to be a favourite utterance. Harsh, strained, and tense as the notes of this bird are, yet they are pleasing from their variety. The voice of the blackbird is infinitely more mellow, but has much less variety, compass, or execution; and he, too, commences his carols with the morning light, persevering from hour to hour without effort, or any sensible faltering of voice. The cuckoo wearies us throughout some long May morning with the unceasing monotony of its song; and though there are others as vociferous, yet it is the only bird I know that seems to suffer from the use of the organs of voice. Little exertion as the few notes it makes use of seem to require, yet, by the middle or end of June, it loses its utterance, becomes hoarse, and ceases from any farther essay of it. The croaking of the nightingale in June, or the end of May, is not apparently occasioned by the loss of voice, but a change of note—a change of object; his song ceases when his mate has hatched her brood; vigilance, anxiety, caution, now succeed to harmony, and his croak is the hush, the warning of danger or suspicion to the infant charge and the mother bird.

“But here I must close my notes of birds, lest their actions and their ways, so various and so pleasing, should lure me on to protract

My tedious tale through many a page;

for I have always been an admirer of these elegant creatures, their notes, their nests, their eggs, and all the economy of their lives; nor have we throughout the orders of creation any beings that so continually engage our attention as these our feathered companions. Winter takes from us all the gay world of the meads, the sylphs that hover over our flowers, that steal our sweets, that creep, or gently wing their way in glittering splendour around us; and of all the miraculous creatures that sported their hour in the sunny beam, the winter gnat (*tipula hiemalis*) alone remains to frolic in some rare and partial gleam. The myriads of the pool are dormant, or hidden from our sight; the quadrupeds, few and wary, veil their actions in the glooms of night, and we see little of them; but birds are with us always, they give a character to spring, and are identified with it; they enchant and amuse us all summer long with their sports, animation, hilarity, and glee; they cluster round us, suppliant in the winter of our year, and, unrepining through cold and want, seek their scanty meal amidst the refuse of the barn, the stalls of the cattle, or at the doors of our house; or, flitting hungry from one denuded and bare spray to another, excite our pity and regard. Their lives are patterns of gaiety, cleanliness, alacrity, and joy."

23. *TURDUS POLYGLOTTUS*, LINNÆUS. — THE MOCKING-BIRD.

AUDUBON, PLATE XXII.

Audubon says, "It is where the great magnolia shoots up its majestic trunk, crowned with evergreen leaves, and decorated with a thousand beautiful flowers, that perfume the air around; where the forests and fields are adorned with blossoms of every hue; where the golden orange ornaments the gardens and groves; where bignonias of various kinds interlace their climbing stems around the white-flowered stuartia, and mounting still higher, cover the summits of the lofty trees around, accompanied with innumerable vines, that here and there festoon the dense foliage of the magnificent woods,

lending to the vernal breeze a slight portion of the perfume of their clustered flowers; where a genial warmth seldom forsakes the atmosphere; where berries and fruits of all descriptions are met with at every step; in a word, kind reader, it is where nature seems to have paused, as she passed over the earth, and, opening her stores, to have strewed with unsparing hand the diversified seeds from which have sprung all the beautiful and splendid forms which I should in vain attempt to describe, that the mocking-bird should have fixed its abode—there only that its wondrous song should be heard.

“But where is that favoured land?—It is in that great continent to whose distant shores Europe has sent forth her adventurous sons, to wrest for themselves a habitation from the wild inhabitants of the forest, and to convert the neglected soil into fields of exuberant fertility. It is, reader, in Louisiana that these bounties of nature are in the greatest perfection. It is there that you should listen to the love song of the mocking-bird, as I at this moment do. See how he flies round his mate, with motions as light as those of the butterfly! His tail is widely expanded, he mounts in the air to a small distance, describes a circle, and, again alighting, approaches his beloved one, his eyes gleaming with delight, for she has already promised to be his and his only. His beautiful wings are gently raised, he bows to his love, and, again bounding upwards, opens his bill, and pours forth his melody, full of exultation at the conquest which he has made.

“They are not the soft sounds of the flute or of the hautboy that I hear, but the sweeter notes of Nature’s own music. The mellowness of the song, the varied modulations and gradations, the extent of its compass, the great brilliancy of execution, are unrivalled. There is probably no bird in the world that possesses all the musical qualifications of this king of song, who has derived all from Nature’s self. Yes, reader, all!

“No sooner has he again alighted, and the conjugal contract has been sealed, than, as if his breast was

about to be rent with delight, he again pours forth his notes with mere softness and richness than before. He now soars higher, glancing around with a vigilant eye, to assure himself that none has witnessed his bliss. When these love scenes, visible only to the ardent lover of nature, are over, he dances through the air, full of animation and delight, and, as if to convince his lovely mate that to enrich her hopes he has much more love in store, he that moment begins anew, and imitates all the notes which nature has imparted to the other songsters of the grove.

"For a while, each long day and pleasant night are thus spent; but at a peculiar note of the female he ceases his song, and attends to her wishes. A nest is to be prepared, and the choice of a place in which to lay it is to become a matter of mutual consideration."

24. *TURDUS MIGRATORUS*, WILS. — *MERULA MIGRATURA*, SW

THE ROBIN, OR RED-BREASTED THRUSH.

THE male of this species is one of the loudest and most delightful of the songsters that frequent the fur countries, beginning his chant immediately on his arrival. Dr Richardson remarks, with great beauty and feeling, "His notes resemble those of the common thrush, but are not so loud. Within the arctic circle the woods are silent in the bright light of noon-day, but towards midnight, when the sun travels near the horizon, and the shades of the forest are lengthened, the concert commences, and continues till six or seven in the morning. Even in these remote regions, the mistake of those naturalists who have asserted that the feathered tribes of America are void of harmony, might be fully disproved. Indeed, the transition is so sudden from the perfect repose, the deathlike silence of an arctic winter, to the animated bustle of summer; the trees spread their foliage with such magical rapidity, and every succeeding morning opens with such agreeable accessions of feathered songsters to swell the chorus — their plumage as gay and unimpaired as when

they enlivened the deep-green forests of tropical climes, that the return of a northern spring excites in the mind a deep feeling of the beauties of the season, a sense of the bounty and providence of the Supreme Being, which is cheaply purchased by the tedium of nine months of winter. The most verdant lawns and cultivated glades of Europe, the most beautiful productions of art, fail in producing that exhilaration and joyous buoyancy of mind which we have experienced in treading the wilds of Arctic America, when their snowy covering has been just replaced by an infant but vigorous vegetation. It is impossible for the traveller to refrain, at such moments, from joining his aspirations to the song which every creature around is pouring forth to the great Creator."

We may add, many naturalists, as Catesby, Buffon, Sparrman, award to tropical birds the greatest brilliancy and beauty of plumage, but deny them the melody of voice, or song. It is certainly true that many of the most beautiful birds, as parrots, toucans, spoonbills, cuckoos, &c. have a coarse and unmelodious voice, yet it would be unfair, from this circumstance, to deny the power of song altogether to the feathered inhabitants of the tropical regions. Hernandez, Sloane, Clavigero, Ulloa, Molina, and Azara, mention birds, natives of Jamaica, Mexico, and South America, known for their melodious song. Forster also informs us, that many small birds in Otaheite have considerable extent and power of song. It has been remarked, that those wild birds which come in contact with man, and often hear the human voice, have their note or song improved.

Awakening of Birds.—Early Morning.

THE awakening of our British Birds, and the early morning of England, are thus beautifully sketched by Mr Knapp:—

"At one period of my life, being an early waker, and riser, my attention was frequently drawn 'to songs of earliest birds;' and I always observed, that these creatures appeared abroad at very different periods, as

the light advanced. The rook is perhaps the first to salute the opening morn ; but this bird seems rather to rest than to sleep. Always vigilant, the least alarm after retirement rouses instantly the whole assemblage, not successively, but collectively. It is appointed to be a ready mover. Its principal food is worms, which feed and crawl upon the humid surface of the ground in the dusk, and retire before the light of day : and, roosting higher than other birds, the first rays of the sun, as they peep from the horizon, become visible to it. The restless inquisitive robin now is seen too. This is the last bird that retires in the evening, being frequently flitting about when the owl and bat are visible, and awakes so soon in the morning, that little rest seems required by it. Its fine large eyes are fitted to receive all, even the weakest rays of light that appear. The worm is its food, too, and few that move upon the surface escape its notice. The cheerful melody of the wren is the next we hear, as it bustles from its ivied roost ; and we note its gratulation to the young eyed day, when twilight almost hides the little minstrel from our sight. The sparrow roost in holes, and under the eaves of the rick or shed, where the light does not so soon enter, and hence is rather a tardy mover ; but it is always ready for food, and seems to listen to what is going forward. We see it now peeping from its pent-house, inquisitively surveying the land ; and, should provision be obtainable, it immediately descends upon it without any scruple, and makes itself a welcome guest with all. It retires early to rest. The blackbird quits its leafy roost in the ivied ash ; its *chink chink* is heard in the hedge ; and mounting on some neighbouring oak, with mellow, sober voice, it gratulates the coming day. ‘ The plain-song cuckoo gray,’ from some tall tree now tells its tale. The lark is in the air, the ‘ martin twitters from her earthbuilt shed,’ all the choristers are tuning in the grove ; and amid such tokens of awakening pleasure, it becomes difficult to note priority of voice. These are the matin voices of the summer season : in winter, a cheerless chirp, or a

hungry twit, is all we hear; the families of voice are away, or silent; we have little to note, and perhaps as little inclination to observe.

“During no portion of the day can the general operations of Nature be more satisfactorily observed than in the early morning. Rosy June—the very thoughts of an early summer’s morning in the country, like enchantment, gives action to the current of our blood, and seems to breathe through our veins a stream of health and enjoyment! All things appear fresh and unsoiled. The little birds, animated and grateful, are frisking about the sprays; others, proceeding to their morning’s meal, or occupied in the callings of their nature, give utterance, by every variety of voice, to the pleasures that they feel; the world has not yet called us, and, with faculties unworn, we unite with them, partake of this general hilarity and joy, feel disposed to be happy, and enjoy the blessings around us: the very air itself, as yet uninhaled by any, circulates about us, replete with vitality, conveying more than its usual portion of sustenance and health; ‘and man goeth forth unto his labour.’ Night-feeding creatures, feeling the freshness of light, and the coming day, are all upon the move, retiring from danger and observation; and we can note them now unhidden in their lairs, unconcealed beneath the foliage in the hedge; the very vegetation, bathed in dew and moisture, full fed, partakes of this early morning joy and health, and every creeping thing is refreshed and satisfied. As day advances, it changes all; and of these happy beings of the early hour, part are away, and we must seek them; others are oppressed, silent, listless; the vegetable, no longer lucid with dew, and despoiled of all the little gems that glittered from every serrature of its leaf, seems pensive at the loss. When blessed with health, having peace, innocence, and content, as inmates of the mind, perhaps the most enjoyable hours of life may be found in an early summer’s morning.”

2). *SYLVA ROSCOF.* — ROSCOE'S YELLOW-THROAT.

AUDUBON, PLATE XXIV.

THIS species, named in honour of the celebrated author of the *Life of Leo the Tenth*, in general appearance very much resembles the Maryland yellow-throat, described by Wilson, but differs from it remarkably in its habits.

Audubon, we think, is in the main right in the determination of his species, although he has not stated precisely the grounds on which he founds his specific characters. The number of tail feathers is sometimes a good character; thus, the sula, from Greenland and the Faro Islands, has ten tail feathers; that from Iceland, twelve; and that from the Cape of Good Hope, fourteen; and these, if the numbers are fairly given, may be considered as distinct species. The length of the tail, the size of the feet, &c. are also employed in specific distinctions; but the chief characters are those taken from the *cranium* and *bill*. There is something truly wonderful in the circumstance that creatures, which, in other characters, so nearly resemble each other, should exhibit, in the form of their crania, evident and characteristic differences. Those naturalists who have rejected this character, have never examined it with care. Brehm has made numerous observations on the forms of the crania of different species of birds, and on their affinities. He says, all birds which pair together belong to the same species, and have the same form of skull; on the contrary, those that do not pair together belong not to the same species, and differ in the form of their cranium. Thus, if we examine the *Scolopax rusticola*, (woodcock,) and the *Corvus corax*, (raven,) from different countries, the differences in the form of the cranium will arrest our attention. It is true, that a certain tact is required in order readily to detect these differences. The following illustrations in

regard to the house sparrow, will shew in what light Brehm views species :—

In Siberia there is a house sparrow, the male of which very much resembles that in our own country. The *Pyrgita rustica* of Brehm occurs at Greifswald, in Northern Germany ; it is rather larger than those in Central Germany, and has a strong bill, *flat crown*, short feet, and slightly notched tail. In Central Germany, as at Renthendorf, there are two species of sparrow, viz. the town sparrow, *Pyrgita pagorum*, and the high-crowned sparrow, *Pyrgita domestica*. The town sparrow has a rather smaller, and, in winter, darker coloured bill, than the North German species, and besides, it has a *flatly arched crown*, and a rather short and straight truncated tail ; the high-crowned sparrow is characterized by its *acutely arched crown*. All these sparrows have a gray stripe across the middle of the crown, which is least distinct in the high-crowned, and broadest in the Siberian. The house sparrow from the neighbourhood of Trieste, Brehm's *Pyrgita media*, is intermediate as to colour between the German and Italian, for the male has, with the exception of a small gray spot in the middle of the crown of the head, a completely brown coloured crown : in the form of the bill and skull it resembles the *Pyrgita rustica*, found at Greifswald. The Italian sparrow forms two species, viz. *Pyrgita cisalpina*, and *itala*. The first agrees in size, and pretty nearly in form of bill, with the German high-crowned sparrow, viz. *Pyrgita domestica* ; the other, however, is much smaller, the bill more slender, and, it would appear, always brown coloured ; in both of them the male has a brown crown. In all the species already noticed, the extremities of the wings are very short. It is otherwise with the following species : The Sardinian, which probably follows the Spanish, and which Brehm, in the meantime, names with Temminck, *Pyrgita hispanica*, has a very strong bill, arched head, and in the male, not only, as in all the preceding, a black throat, but also black spots on the sides of the belly. In the Egyptian sparrow, Brehm's *Pyrgita ægyptica*, the bill is shorter,

the crown flat, but the marking of colour the same. The same is the case with the eastern; but this is much smaller than the immediately preceding, and has a more slender bill and more highly arched crown. It lives in the countries extending from Egypt to Bucharía. The last species to be mentioned is the *Pyrgita arcuata*, from the Cape of Good Hope, which in marking resembles the immediately preceding; but, in the male, there is a distinct white stripe under the eye. It is true, there are varieties of these species: thus, in Southern Germany there occur, although but rarely, male house sparrows, in which the head is entirely brown; and in Egypt individuals occur which approach in coloured delineation to ours. But these circumstances do not, in the opinion of Brehm, invalidate his distinction of these species, as he states his firm conviction that the individuals of his different species do not breed together. Temminck says, that the *Pyrgita cisalpina* and *domestica* do not pair together; and Brehm has proved the same to be the case with two of the German species, viz. *Pyrgita domestica* and *pagorum*. Brehm makes out another species, which he names *Pyrgita septentrionalis*, that extends from Kiel to Copenhagen, and probably much farther northward. It has a flat crown, and short bill and head. A species occurs at Trieste of the same size, with a short bill and high crown. Two species breed at Renthendorf, the one has rather a flat crown, but with longer feet and bill than the northern; the other has the crown much elevated, extended bill, and short tail. This is Brehm's *Pyrgita montana*, the other his *Pyrgita campestris*.

It is also worthy of notice, that the species differ according to their place of residence or locality. Thus, Brehm says he has convinced himself, that birds inhabiting cone forests, as those where pines prevail, differ from those residing in forests of broad leaved trees, as oak, lime, &c. This observation he has made with the *Emberiza citrinella*, or yellow-hammer, *Fringilla xalebs*, or chaffinch, *Fringilla linota*, or linnet, *Sylvia*

atricapilla, or blackcap, *Sylvia garrula* of Bechstein, and also with species of *Troglodytes* and *Perdrix*. They shew such marked differences, that we can determine them with ease after a little practice. The principal differences are here again in the head and bill. It has been ascertained, that different forms of crania determine different species of mammalia, but that the determinations are less strikingly marked in the smaller animals, as those of the mouse, shrew, and bat tribes, than in the larger ones, but that, in all these, the teeth afford good distinctive characters. It is worthy of remark, that, as the bill in birds is equivalent to the teeth in quadrupeds, that differences in the manducatory organs, in both classes, afford specific characters.

Many ornithologists, says Brehm, will consider these distinctions either as useless, or as leading to needless minutiae,—an opinion he considers as erroneous. In illustration of the importance of such distinctions, he remarks, that the very precise determination of the species of birds affords interesting disclosures in regard to their migrations. Hitherto, says he, it has been believed that the *Strix bubo*, or great horned owl, *Cinclus*, or water rail, wild duck, (*Anas boschas*), *Regulus*, or gold-crested wren, and many others, remained in his neighbourhood, (Renthendorf,) during the winter, which is not the case; for accurate determination of the species has shewn, that their great-horned owl leaves them, and its place is taken in the winter season by that from the north; that a kind of wild duck, which rarely breeds in Central Germany, but is a native of the Faro Islands, is common in the open brooks and rivers in the winter season; that the *Northern Cinclus* occurs more frequently in winter in their mountains, streams, and brooks, than the *German Cinclus*; and that it is rarely the case that the gold-crested wren, which breeds there, remains over the winter, its place being taken by the northern species, which has wandered to them across the Baltic.

These facts, (allowing Brehm's determinations to be correct,) shew, in a very interesting manner, the impor-

tance of his observations. It is not, it is true, a new mode of determining species; for similar minute distinctions have long since been made by sportsmen, who, for example, distinguish two kinds of the common snipe, naming the smaller the *high crowned*; and some jagers even maintain there are three species. Bird catchers speak of two species of the goldfinch, (*Fr. carduelis*,) viz. a larger and a smaller; also, of an *Alder Siskin* and a *Buch Siskin*; of two kinds of grosbeak, (*Loxia pyr.*); of a larger and smaller nightingale; of different finches; of different linnets, (*Fringilla linaria*.) These distinctions, Brehm says, he has proved to be correct, by a careful examination of the osteology of the birds in question.

26. *SILVIA VIGORSII*. — VIGORS' WARBLER.

AUDUBON, PLATE XXX. — MALE.

Nothing whatever is known of the habits and manners of this species, named after Mr Vigors, an active, intelligent, and ingenious ornithologist.

27. *SILVIA CHILDRENI*. — CHILDREN'S WARBLER.

AUDUBON, PLATE XXX.

A rare species, named after Mr Children, the celebrated chemist.

28. *SILVIA CARBONATA*. — THE CARBONATED WARBLER.

AUDUBON, PLATE IX.

A new species, concerning which nothing is known, killed by Audubon in the state of Kentucky.

29. *SILVIA RATHBONII*. — THE RATHBONI WARBLER.

AUDUBON, PLATE LXV.

Of this new and beautiful species, named in remembrance of the Rathbones of Liverpool, nothing is known.

30. *TROCHILUS COLUMBRIS*, LINNÆUS.

NORTHERN HUMMING BIRD.

“ The migration of birds,” say the authors of *The Northern Zoology*, “ has in all ages been a matter of pleasing speculation to the natural philosopher ; but in no instance does it appear more wonderful than when we contemplate it as forming part of the economy of the humming birds. The vast extent of space traversed by some of the winged tribes in their way from their winter retreats to their breeding places, gives us great ideas of their unwearied strength of wing and rapidity of flight ; but how is our admiration of the ways of Providence increased, when we find that one of the least of its class, clothed in the most delicate and brilliant plumage, and apparently more fitted to flutter about in a conservatory, than to brave the fury of the blast, should yield to few birds in the extent of its migrations ! The ruby-throated humming bird, which winters to the southward of the United States, ranges, in summer, to the fifty-seventh parallel, and, perhaps, even still farther north.* We obtained specimens on the plains of the Saskatchewan, and Mr Drummond found one of their nests near the sources of the Elk River. This nest is composed principally of the down of an anemone, bound together with a few stalks of moss and bits of lichen, and has an internal diameter of one inch. The eggs, two in number, of a reddish white colour, and obtuse at both ends, are half an inch long, and four lines and a quarter in transverse diameter.”

* Kotzebue informs us, that the *Trochilus rufus* is found in summer as high as the sixty-first parallel, on the Pacific coast. The climate, however, is considerably milder to the west of the Rocky Mountains than to the eastward.

31. *REGULUS CUVIERII*.—CUVIER'S REGULUS.

AUDUBON, PLATE LV.

This beautiful little species, from Pennsylvania, is of rare occurrence.

32. *ANTHUS PIPPIENS*.—THE PRAIRIE TITLARK.

AUDUBON, PLATE LXXX.

Nothing particular is known of this new species.

33. *TROGLODYTES BEWICKII*.—BEWICK'S WREN.

AUDUBON, PLATE XVIII.

A new species of wren, named in honour of the reviver of engraving on wood in this country.

34. *EMBERIZA HENSLOWII*.—HENSLOW'S BUNTING.

AUDUBON, PLATE LXX.

Nothing is known of this species, named after Professor Henslow of Cambridge.

35. *EMBERIZA NIVALIS*.—SNOW BUNTING.

"Amongst the specimens of this bird received are two males, each measuring seven inches. One killed on May 10th, presents precisely the colours of *Le vieux male en plumage d'hiver*, Temm.; and the other, killed on the 27th of the same month, is in complete summer plumage, with only the pure black and white colours. These two specimens shew, in the most satisfactory manner, how the change to the summer plumage takes place, by the tips of the feathers on the parts tinged red dropping off, as mentioned by Temminck. A very few of the red points remain on the second specimen; but they drop off on the slightest touch. And the unequal, and somewhat wiry appearance of the other

feathers, mark the recent loss they have sustained of their coloured margins.

"A female, killed on the 10th of June, is noticed by Mr Edwards, as having the crown and nape black, with white tips. Fabricius remarks correctly, that the white feathers of the back and belly, when blown aside, appear black at their bases. This occurs both in the summer and winter plumage of the male bird.

"The snow buntings frequent the shores of the Arctic Sea during the summer season, retiring inland in the winter to shelter themselves in wooded tracts. At Cumberland House, in the interior of the country, and in lat. 54°, they remain the greater part of the winter, absenting themselves only occasionally during the severe storms of December and January. At Fort Enterprise, in lat. 64°, they were also seen in the winter, but more rarely, and in a register kept for a series of years at Fort Churchhill, in lat. 59°, on the sea-coast, they are noted as arriving from the 26th of March to the 7th of April; disappearing in the summer, returning again in the end of September, and remaining for about a month. It is mentioned as a rare occurrence, that one was killed in December. They made their first appearance at Captain Parry's winter quarters, in lat. 66°, on the 27th of April. In their winter migrations, they reach, according to Wilson, (vol. ii. p. 224.) as far south as the borders of Maryland.

"They breed on Melville peninsula, and Captain Lyon describes their nest as being placed in the crevices of rocks, or amongst loose stones, and constructed of dried grass, neatly lined with white deers' hair. They lay seven eggs. (PARRY'S *Narrative*, p. 462.)

"Pennant remarks, that it is singular that a graminivorous bird should resort to the barren regions of the Arctic circle; but Mr Brown has pointed out, that the grasses which grow on the islands of the Arctic Sea, form nearly one-fifth of the phænogamous vegetation; a proportion nearly double to what occurs in any other part of the world. These grasses retain their seeds all

the winter, and thus furnish nourishment for the birds which arrive upon the melting of the snow.* The snow bunting, moreover, feeds, as Temminck remarks, also on insects, and Wilson found their stomachs filled with shell fish.

“Fabricius,† and other writers, mention, that the male loudly serenades the female during incubation, but that his song ceases when the young are hatched. Sir George Mackenzie informs us, that the song is pleasing, and resembles the first three or four notes of the robin;‡ whilst Marten, who, perhaps, was not musical, says, ‘I can tell nothing of its singing, only that it whistleth a little, as birds use to do when they are hungry.’ *Spitzb.* p. 73.” — *Richardson.*

GENUS IV — COLUMBA

36. COLUMBA MIGRATORIA. — THE PASSENGER PIGEON.

AUDUBON, PLATE LXXI.

THE most important feature in the natural history of these birds is their migration. These migrations are caused by the necessity of providing for food, and, consequently, they do not take place at any fixed period or season of the year. Indeed it happens sometimes, that an abundant supply of food in one district, will keep these birds absent from another for years.

Their great power of flight enables them to pass over vast tracts of country in a very short time. Pigeons, for example, have been killed in the neighbourhood of New York, with their crops still filled with rice, collected by them in the fields of Georgia and Carolina, the nearest points at which this supply could possibly be obtained; and as it is well ascertained, that, owing to their great power of digestion, they will decompose food entirely in twelve hours, they must

* On their first arrival they generally feed on grass seeds; but as the summer advances, they live much on worms, and are then not so much esteemed. — *HARNE, l. c.*

† *Fauna Græc.* p. 119.

‡ *Travels in Iceland*, p. 341.

have travelled between 300 and 400 miles in six hours, making their speed, at an average, about one mile in a minute; and this would enable one of these birds, if so inclined, to visit the European continent, as swallows undoubtedly are able to do, in a couple of days. An individual of this species was shot, while perched on a wall near a pigeon-house at West Hall, Monymead, Fifeshire, on the 31st December, 1825.* This vast

* *Explanation of the Flight of Birds.* — Were each muscle of flight to contract separately, it would only put in motion the most mobile of the parts of the body to which it is especially attached, but there would be no locomotion. This assertion is true in every respect. Thus, for example, in the lowering of the wings, during flight, the resistance or contraction of the middle pectoral muscles and their congeners is absolutely necessary, since without it the wings would fall by their own weight, and the action of the great pectoral muscles would be useless. Besides, in the depression of the wings, the fixed point of the middle pectoral muscles, which is at the humerus, where their respective tendon is attached, retiring, it must necessarily be that the sudden contraction of these muscles contributes to the ascent of the trunk, until the moment when the humeri are arrested by the cessation of the action of the great pectoral muscles.

It is easy to conceive why the projector muscles of the trunk and the depressors of the wings are stronger than the levators. It is because the former have to make the trunk perform a kind of leap, and by this means lower the wings, notwithstanding the resistance of the latter; and these, not being able to prevent the humeri from falling, take their fixed point in them, and draw the trunk upwards, thus seconding the action of the great pectoral muscles, and participating of the kind of projection of the trunk upwards and forwards.

Thus, to enable the bird to rise in the air, and direct itself there, all the muscles of flight must contract in the following order. The clavicle and scapula, being fixed by the trapezius, the rhomboideus, the upper part of the longissimus dorsi, the costo-scapularis and the clavicularis brevis, and the wing being in part unfolded, carried forwards, and raised by the action of the pectoralis medius, infra-clavicularis internus, the levatores humeri, the coraco-brachialis and extensors of the anterior membrane of the wing, the bird then springs into the air, in accomplishing the extension of its wings. At the same time, the great pectoral muscles, the principal ones of the wings, and whose fixed point is at the humerus at the insertion of their respective tendon, suddenly contract; and, on account of the resistance which the air opposes to the motion of

power of flight is seconded by great acuteness of vision, which enables them, as they travel at a swift rate, to view objects below them, to discover their food with facility, and thus to finish their journey. Thus, it has

the wings, bear all their force upon the sternum, through the intervention of which they make the trunk perform a kind of leap; and the wings, the immediate lowering of which the atmospheric fluid resists, as we have just said, are nevertheless lowered by this indirect means.

While all these things are performing with an extreme velocity, several muscles of the arm, among others the extensors of the fore-arm, try to extend the wing, but as the resistance of the air upon the extremities of the wings is very great, and as that fluid opposes all rapid motion on their part, these muscles then direct their force towards the trunk. Taking, therefore, their fixed point in the bones of the fore-arm, on the outer side of the wing, and acting by their upper extremity, they extend the arm upon the fore-arm; and as this action, and that of the great pectoral muscles, take place at the same moment and in concert at both sides of the trunk, the latter is pushed upwards in a middle direction.

Thus, the combination of these various efforts impress upon the trunk a force of projection which carries it upwards and forwards along with the wings; and this projection has evident relations to the leap of other animals. Then the great pectoral muscles relax, and the wings rise immediately, partly by the reaction of the air upon their lower surface, and by the descent of the trunk, and partly by the action of the middle pectoral muscles and their congeners, whose contraction is in a manner permanent during flight.

The bird, after leaping forwards, no longer weighing upon the air during a moment, that fluid then, by its reaction, repels it, and tends to raise it higher than the leap alone could have made it do. It then prevents it from falling so low as the point of departure.

The ascent of the trunk is, without doubt, favoured by the internal air, which introduces itself into all parts of the animal, and which it has the faculty of retaining. This air, which is perhaps a light gas, being dilated and rarefied by great heat, not only is its specific gravity thereby greatly diminished, but it must contribute to diminish that of the bird by filling up all its vacuities during flight.

The bird which descends with precipitation, if it be afraid of injuring itself in approaching the ground, opens its wings and tail, and performs several small leaps, which, diminishing the rapidity of the descent, permit it to alight gently.

It is by means of the tail that certain birds are enabled to descend from great heights with precipitation: by bringing the

been observed, that the pigeons, when passing over a sterile part of the country, keep high in the air; but if, on the contrary, the land is richly covered with food, they will fly low, in order to discover the places most abundant in food. The form of these migrating bodies is an elongated oval, steered by a long, well-plumed tail, furnished with well set, and very muscular wings, for the size of the individual. If a single bird is seen gliding through the woods, and close by, it passes as if by magic; and, on trying to see it again, the eye searches in vain—the bird is gone.

The multitudes of these birds almost pass belief. In the autumn of 1813, Audubon left his house at Henderson, on the banks of the Ohio, on his way to Louisville. Having met the pigeons flying from N.E. to S.W. in greater numbers than usual, he felt an inclination to enumerate the flocks that would pass within the reach of the eye in the course of one hour. He dismounted, and, seating himself on a small eminence, began to mark, in his pocket-book, a dot for every flock which passed. Finding, however, that this was scarcely possible, and feeling unable to record the flocks, as they constantly increased, he rose, and, counting the dots already put down, found that 163 had been made in twenty-one minutes. He travelled on, and still met more the farther he went. The air was literally filled with pigeons; the light of noon-day became dim, as during an eclipse. Whilst waiting for dinner at the Sun, Audubon saw, at his leisure, immense legions still going by, and he says, "But I cannot describe to you the extreme beauty of their aerial evolutions, when a hawk chanced to press upon the rear of a flock. At once, like a torrent, and with a noise like thunder, they rushed into a compact mass,

feathers of the tail close together, and closing the wings, they thereby render the action of the air predominant on the posterior part of the body, which directs the anterior part downwards, and delivers it over entirely to the influence of gravity.

The tail can strengthen the action of the wing, by directing itself towards it.

pressing upon each other towards the centre. In these almost solid masses, they darted forward in undulating and angular lines, descended and swept close over the earth with inconceivable velocity, mounted perpendicularly, so as to resemble a vast column, and, when high, were seen wheeling and twisting within their continued lines, which then resembled the coils of a gigantic serpent." Before sunset, Audubon reached Louisville, distant from Hardensburgh 55 miles; the pigeons were still passing in undiminished numbers, and continued to do so for three days in succession. Audubon attempts to reckon the number of pigeons in one of these flocks, and the daily quantity of food consumed by it. He takes, as an example, a column of one mile in breadth, and supposes it passing over us, without interruption, for three hours, at the rate of one mile per minute. This will give us a parallelogram of 180 miles by 1, averaging 180 square miles; and, allowing two pigeons to the square yard, we have one billion one hundred and fifteen millions one hundred and thirty-six thousand pigeons in one flock: and, as every pigeon consumes fully half a pint per day, the quantity required to feed such a flock must be eight millions seven hundred and twelve thousand bushels per day. Audubon thus describes the appearance of the pigeons at one of their roosting places:—"The sun was lost to our view, yet not a pigeon had arrived; but, suddenly, there burst forth a general cry of, '*Here they come!*' The noise which they made, though yet distant, reminded me of a hard gale at sea, passing through the rigging of a close reefed vessel. As the birds arrived, and passed over me, I felt a current of air that surprised me. Thousands were soon knocked down by the men provided with poles. The current of birds, however, kept still increasing. The fires were lighted, and a most magnificent, as well as a wonderful and terrifying sight, presented itself. The pigeons, coming in by thousands, alighted every where, one above another, until solid masses of them,

resembling hanging swarms of bees, as large as hogs-heads, were formed on every tree, in all directions. Here and there the perches gave way under the weight with a crash, and, falling to the ground, destroyed hundreds of the birds beneath, forcing down the dense groups with which every stick was loaded. It was a scene of uproar and confusion. I found it quite useless to speak, or even to shout, to those persons nearest me. The reports, even, of the nearest guns, were seldom heard; and I knew only of the firing by seeing the shooters reloading. No person dared venture within the line of devastation; the hogs had been penned up in due time, the picking up of the dead and wounded being left for the next morning's employment. Still the pigeons were constantly coming; and it was past midnight before I perceived a decrease in the number of those that arrived. The uproar continued, however, the whole night; and, as I was anxious to know to what distance the sound reached, I sent off a man, accustomed to perambulate the forest, who, returning two hours afterwards, informed me he had heard it distinctly when three miles from the spot. Towards the approach of day, the noise rather subsided; but, long ere objects were at all distinguishable, the pigeons began to move off, in a direction quite different from that in which they had arrived the evening before; and, at sunrise, all that were able to fly had disappeared. The howlings of the wolves now reached our ears; and the foxes, lynxes, cougars, bears, racoons, opossums, and pôle-cats, were seen sneaking off from the spot, whilst eagles and hawks, of different species, accompanied by a crowd of vultures, came to supplant them, and enjoy their share of the spoil. It was then that the authors of all this devastation began their entry amongst the dead, the dying, and the mangled. The pigeons were picked up, and piled in heaps, until each had as many as he could possibly dispose of, when the hogs were let loose to feed on the remainder."

The following table of Brehm's arrangement of the European pigeons, will interest some of our readers :—

Columbine birds. Columbidae. — *Leach*.

GENUS I

Pigeons Columba — *Linnaeus, Boie, Brehm*.

First Division.

Ring pigeons Columbae torquatae.

- 1 High crowned ring pigeon C palumbus — *Lin*.
- 2 Pine ring pigeon C pinetorum — *Brehm*
- 3 Flat crowned ring pigeon C torquata. — *Brehm*

Second Division.

Field pigeons Columbae campestris.

- 1 Domestic field pigeon C domestica — *Lin*
- 2 Southern field pigeon C livia — *Boie*
- 3 Amalas field pigeon C amalas — *Brehm*.

Third Division.

Cave pigeons Columbae cavorum.

- 1 Stock pigeon C aenas — *Lin*
- 2 Cave pigeon C cavorum — *Brehm*.

GENUS II

Turtle dove Peristera — *Boie*

- 1 High crowned turtle dove P turtur — *Boie*
- 2 Flat crowned turtle dove P tenera — *Brehm*
- 3 Dubious turtle dove P dubia — *Brehm*

GENUS V — TETRAO.

37. GROUSE.

BIRDS of this genus are of a hardy frame, and patient of extreme cold. They only occur in northern or temperate countries, and have not yet been discovered in Africa, in the eastern parts of Asia, or in South America. The northern regions of Europe and America produce them in the greatest abundance. The special localities which they affect vary according to the different kinds; and even the haunts of the same species admit of variation, according to circumstances. The wood grouse (such as the magnificent capercailzie,

T. urogallus, a former inhabitant of Scotland) prefer forests of pine, and of such other hardy trees as grow readily on the sides of mountains. The red grouse, (*T. scoticus*), so highly esteemed as an article of food, and so eagerly followed by our sportsmen, confines itself to the acclivities of mountains and moors, and is careless of other shelter than that afforded by the natural roughness of the ground and its plentiful covering of heath. The habits of the black cock (*T. tetrix*) may be said to be, in this respect, intermediate between those of the two species just alluded to; for although it usually occurs in mountainous and moorish districts, it exhibits a partiality for cover of birch or willow. Ptarmigans seem to prefer, in comparatively temperate climates, such as that of Scotland, the bare and stony sides and summits of the highest mountains; but under the severe climate of Greenland, and the most northern parts of North America, they are chiefly found in the vicinity of the sea shore, by the banks of rivers, and among the willow and other copse wood of the lower and more sheltered vales.

38. *TETRAO (LAGOPUS) MUTUS*, LEACH, — THE PTARMIGAN.

Ptarmigan, *Penn. Brit. Zool.* 1. p. 359, pl. 57. — Upper Figure.
Tetrao lagopus, *Captain Sabine, Suppl. Parry's First Voy.*
 p. cxviii. *Sab. (J.) Frankl. Journ.* p. 682. *Richardson, App.*
Parry's Second Voy. p. 350.

ACCORDING to Captain Sabine, this bird inhabits the islands lying to the southwest of Baffin's Bay, as well as the loftiest mountains in Scotland. A specimen from Churchill River, Hudson's Bay, was declared by Mr Sabine to be identical with the ptarmigan of Scotland, thus establishing it as an inhabitant of the American continent. It remains, however, to be seen whether or not it is the same, according to the method of discrimination, depending on the form of the head, &c. as pointed out by Brehm.

39. *TETRAO (LAGOPUS) SALICETI*, SWAINSON.—WILLOW GROUSE.

GENUS, Tetrao, *Linn.* Sub-genus, Lagopus, *Vieillot.* — The White Partridge, (*Lagopus*,) *Edwards*, pl. 72, male in spring. — Tetrao lagopus, *Forst. Phil. Trans.* lxx. p. 390. — White Grouse, *Penn. Art. Zool.* ii. p. 307, No. 183. — Rehusak Grouse, *Idem.* p. 316; E. — Willow Partridge, *Hearne, Journ.* p. 411. — Tetrao saliceti, *Temm.* n. p. 471.; *Sub. Frankl. Jour.* p. 681; *Richardson, App. Parry's Second Voy.* p. 347, No. 7. — Wawpeethæo, *Crees.* Kasbah, *Chapewyans.* Akkaidiggauck, *Esquimaux.*

“THE willow grouse inhabits the fur countries from the fiftieth to the seventieth parallels of latitude, within which limits it is partially migratory; breeding in the valleys of the Rocky Mountains, the Barren Grounds, and Arctic coasts; collecting in flocks on the approach of winter, and retiring southward as the severity of the weather increases; considerable bodies, however, remaining in the woody tracts as far north as latitude 67°, even in the coldest winters. It is tolerably abundant in the sixty-fifth parallel all the year, and assembles in vast flocks on the shores of Hudson's Bay in the winter time. Mr Hutchins has known ten thousand captured in a single season at Severn River, and Sir Thomas Button, and other navigators, speak of still greater multitudes. In the year 1819, its earliest appearance at Cumberland House, lat. 54°, was in the second week of November; and it returned to the northward again before the beginning of spring. The species seems to be identical with the willow grouse of the Old Continent, which inhabits the greater part of Scandinavia, Kamtschatka, Greenland, and Iceland, and also the valleys of the Alps. In America, these grouse shelter themselves in the winter in thickets of willow and dwarf birches, on the banks of marshes and lakes, the tops and buds of the shrubs constituting the principal part of their food at that season. Denuded sandy spots are favourite resorts in the daytime; but they pass the night in holes in the snow. When pursued by a sportsman or bird of prey, they often

terminate their flight by diving precipitately into the loose snow, endeavouring to escape by working their way beneath the surface, which they do with considerable celerity. In thick, windy, or snowy weather, they are very shy, and then often perch on the taller willows, when it requires a sharp eye to distinguish them from flakes of snow. In the breeding season, they feed mostly on the berries of the *empetrum nigrum*, *vaccinium vitis idæa*, and *arbutus alpina*, which are exposed by the first thaws, and do not disappear until replaced by the new crop. At the commencement of this period they begin to lose their snow-white winter dress, the male changing first, his head and neck becoming red, and, when viewed from a distance, contrasting so strongly with the white body, as to appear as if they were stripped of their feathers, and quite raw. The beginning of June is the period of incubation, and the female then moults, the delay being admirably suited to her habits, and well calculated to ensure her safety. The male puts on his coloured plumage as soon as the rocks and eminences most exposed to the sun become bare, and at a time when he is accustomed to stand on a large stone, and call, in a loud, croaking voice, to the females, that hide themselves in their white dress among the unmelted snow on the more level ground. Like most other birds that summer within the Arctic circle, they are more in motion in the milder light of night than in the broad glare of day. I had no opportunity of seeing the eggs. The eggs are bright or dark yellow, with chestnut brown spots, or dots." — *Richardson*.

40. *TETRAO (LAGOPUS) RUPESTRIS*, LEACH. — ROCK GROUSE.

Rock grouse, *Penn. Arct. Zool.* 2, p. 312, N. 184. — Tetrao lagopus, *Temm.* 2, p. 468.

"THIS bird was first described by Pennant as a distinct species, principally on the authority of Mr Hutchins, and was adopted into the compilations of Latham and

Gmelin; but it was reserved for Captain Sabine to point out clearly the differences between it and the *Tetrao lagopus* of the Highlands of Scotland; the principal of which are, the colours and markings of the summer plumage, and the size; the rock grouse being smaller, having more of the brownish yellow in its summer dress, broader bars of black, and none of the cinereous tint which predominates in the ptarmigan.* If the latter visits the settlements on Hudson's Bay otherwise than accidentally, of which there is much doubt, Hearne and some other writers have confounded the two species under the name of rock grouse; and, indeed, in their winter dress, the only perceptible difference between the two seems to be size; hence we can learn nothing certain from these authors of the distribution of the species. Hutchins reports, that the rock grouse is numerous at the two extremities of Hudson's Bay, but does not appear at the middle settlements, (York and Severn factories,) except in very severe seasons, when the willow grouse are scarce; and Captain Sabine informs us that they abound on Melville Island, lat. 74° to 75° , in the summer. It arrived there in its snow-white winter dress on the 12th of May, 1820; at the end of that month the females began to assume their coloured plumage, which was complete by the first week in June, the change at the latter period being only in its commencement with the males. Some of the males were killed as late as the middle of June in their unaltered winter plumage. In this respect the species differs from the willow

* Captain Sabine observes, that "the distribution of the coloured plumage of the rock grouse corresponds, both in the male and female, with the ptarmigan, the same parts of both species remaining white; but there is much difference in the colour itself the upper plumage of the ptarmigan is cinereous, with undulating and narrow black lines and minute spots; whereas in the rock grouse each feather is black, cut by transverse broad lines or bars of a reddish yellow, which do not reach the shaft, and have spaces of black between them broader than themselves, the feathers are tipped, in the male, with a light colour, that approaches to white in the female."

grouse, whose males first assume the summer colours. The rock grouse is found also on Melville Peninsula and the Barren Grounds, seldom going farther south in winter than latitude 63° in the interior, but descending along the coast of Hudson's Bay to latitude 58°, and in severe seasons still farther to the southward. It also occurs on the Rocky Mountains as far south as latitude 55°. It exists in Greenland, is common in Norway, is known in Sweden by the name of *sno rissa*, and is the species most frequent in the museums of France and Italy under the name of *Tetrao lagopus*. It is not a native of Scotland. The rock grouse, in its manners and mode of living, resembles the willow grouse, except that it does not retire so far into the woody country in winter. Contrary, however, to what Hearne says, it is frequent in open woods on the borders of lakes in that season, particularly in the sixty-fifth parallel of latitude, though, perhaps, the bulk of the species remains on the skirts of the Barren Grounds. It hatches in June. The ground colour of the egg is, according to Captain Sabine, a pale reddish brown, and is irregularly blotched and spotted with darker brown." — *Richardson*.

41. TETRAO (LAGOPUS) LEUCURUS, RICH.

WHITE-TAILED GROUSE.

Genus, Tetrao, *Linn*. Swains. — Sub-genus, (2,) Lagopus, *Ray*
In winter is entirely white in summer coloured the tail white.

"OF this undescribed species I have only five specimens, four procured by Mr Drummond on the Rocky Mountains, in the fifty-fourth parallel, and one by Mr Macpherson on the same chain, nine degrees of latitude farther north. Mr Douglas killed several in 1827, but, through the want of means of carriage, was obliged to leave them behind. It is said to have the habits of the ptarmigan, and to inhabit the snowy peaks near the mouth of the Columbia as well as the lofty ridges of

the Rocky Mountains. Its summer dress is intermediate in colour between that of *T. lagopus* and *rupestris*; but it differs from both these species in its smaller size, and in its tail being totally white at all seasons. The sexes of my specimens were not noted; but none of them have the black eye stripe; and Mr Drummond, who killed great numbers, is confident that that mark does not exist in either sex."—*Richardson*.

Account of several new species of Grouse, recently discovered by Mr David Douglas, among the Rocky Mountains.

THE interesting species of grouse, which we have now the pleasure of noticing, were discovered by Mr David Douglas, the intelligent traveller employed by the London Horticultural Society to explore some of the northern regions of America. They are described and figured in Mr James Wilson's elegant *Illustrations of Zoology*, and specimens of the whole are deposited in the Edinburgh College Museum.

The following details, communicated by Mr James Wilson, will enable those of our readers who may not have an opportunity of consulting his splendid *Illustrations*, to form a distinct conception of these beautiful and interesting birds.

"The most remarkable of the species, to which we have now to direct the attention of our readers, is the *Tetrao urophasianus*, or pheasant-tailed grouse, the largest of all the American species of the genus, and, excepting the capercaillie, or wood grouse, the largest to be met with in any country. This bird was observed by Messrs Lewis and Clark, by whom it is mentioned under the name of the 'cock of the plains.' A short notice of it was also published some time ago, in the *Zoological Journal*, by Charles Lucian Bonaparte, who obtained an imperfect specimen of the male in London.

"The length of this bird, when full grown, is thirty-

two inches; its girth, twenty-two. It weighs from six to eight pounds. In the female, the lengthened filamentous feathers on the sides of the neck are wanting. The skin, cheek, and upper part of the throat, are dingy white, streaked with brownish black; the remainder of the anterior portion of the neck and breast are grayish white, minutely streaked and spotted with brownish black. In other respects, her plumage nearly resembles that of the male. Her size is considerably less.

“The flight of these magnificent bird is slow and unsteady, and affords but little amusement to the sportsman. Their wings are feeble, and of small dimensions, in proportion to the great size and weight of their bodies; and their progress through the air is consequently effected rather by a fluttering motion, than by a direct and continuous flight. They rise at first hurriedly from the ground, giving two or three claps with their wings in quick succession, and, after flying a short distance, all the time swinging from side to side with a whirring noise, they gradually drop again to the ground. When raised, their voice resembles that of the common pheasant. Though they may be said to represent the capercailzie, or wood grouse, (*T. urogallus*,) in the New World, they so far differ from that species in their mode of life, that they never perch. ‘Indeed,’ says Mr Douglas, in a letter addressed to me on these subjects, ‘within their range not a bush larger than a common broom or whin is to be found.’—‘The young autumnal birds,’ he adds, ‘are of a light gray, or betwixt that and slate colour. The œsophagus (externally) in colour is similar to that of *T. cupido*, but has numerous reticulated minute nerves (blood-vessels?) of a darker tint, which are conspicuous when in an inflated state. How delighted you would be to see this bird making love! His usual form is totally lost. He appears all neck and breast, and is on the whole one of the most grotesque looking creatures that can well be imagined.’

“They pair in March and April. ‘Small eminences

on the banks of streams are the places usually selected for celebrating the weddings; the time generally about sunrise. The wings of the male are lowered and buzzing on the ground; the tail spread like a fan, somewhat erect; the bare yellow œsophagus inflated to a prodigious size, fully half as large as his body, and from its soft membranous substance being well contrasted with the scale-like feathers below it on the breast, and the flexile silky feathers on the neck, which on these occasions stand erect. In this grotesque form he displays, in the presence of his intended mate, a variety of pleasing attitudes. His love-song is a confused, grating, but not offensively disagreeable tone,—something that we can imitate, but have a difficulty in expressing, — *Hurr-hurr-hurr-r-r-r-hoo*, ending in a deep hollow tone, not unlike the sound produced by blowing into a large reed.'

"The pheasant-tailed grouse builds on the ground, beneath the shade of *Purshia* and *Artemisia*, or near streams, among *Phalaris arundinacea*. The nest is carelessly constructed of dry grass and twigs. The eggs are of a wood-brown colour, irregularly blotched with chocolate brown at the larger end; in size they equal those of a common fowl, and vary from thirteen to seventeen in number. The period of incubation is about three weeks; and the young leave their nest a few hours after they are hatched.

"In the summer and autumn months, according to Mr Douglas, these birds are seen in small troops, and in spring and winter in flocks of several hundreds. They are plentiful throughout the barren arid plains of the river Columbia, as well as in the interior of North California. They do not exist on the banks of the river Missouri; nor have they been seen in any place east of the Rocky Mountains. The vernacular name by which they are known among the Kyuse Indians, who reside on the banks of the Columbia, is *Pyamis*. Their food consists chiefly of the buds, leaves, and fruit of *Purshia tridentata*, *Artemisia*, the seeds of *Cactus*, brown and black ants, and sand bugs. Their

flesh is dark coloured ; and, I am sorry to add, not particularly good in point of flavour.

“ The next species in size and importance is Richardson’s grouse, (*Tetrao Richardsoni*), so named in honour of Dr Richardson, the distinguished traveller. The most remarkable feature in the plumage of this species is the contrast between the plumage of the male and female. The prevailing colours of the former are obscure lead colour and brown, those of the latter yellowish brown and black, with a few streaks and spots of white.

“ The weight of these birds varies from two and a half to three pounds. Their flesh is white and excellent. They pair in April, and form their nests of small twigs, leaves, and grass, on the declivities of subalpine hills. They usually select, for the purposes of nidification, small coppices of hazel and birch, in the vicinity of springs or mountain rills. They lay from thirteen to nineteen eggs, which are nearly as large as those of the domestic fowl, and are marked with larger and smaller specks of red. According to Mr Douglas their period of incubation is three weeks. They feed on the buds of the pine, the catkins of birch, alder, and hazel, and the fruit of *Fragaria* and *Vaccinium*. Their voice is a continuation of distinct hollow sounds like the cooing of a dove. Their flight is swift, steady, and particularly graceful. When startled from the sombre branches of the overshadowing pine trees, their usual roosting places, they descend, or rather drop, to within a few feet of the ground before they commence flying,—a circumstance which, Mr Douglas observes, often leads the hunter to think he has secured his bird, until he sees it in the distance winging its way through the forest. This trait seems peculiar to the species. No bird, however, is more easily destroyed, for they will often continue to sit, with apparent tranquillity, on the rocks or pine trees, after several shots have been fired. In spring they are seen in great numbers basking in the sun on the southern declivities of the low hills, and in

winter in the neighbourhood of springs, lakes, or large streams, in flocks of sixty or eighty. They are easily captured by small snares formed of sinews of the deer tribe. They are very abundant on the subalpine regions of the Rocky Mountains, in latitude 52° N. longitude 115° W. They are still more numerous in the mountainous districts of the river Columbia, in lat. 48° N. long. 118° W.

“ This species is rare on the mountains of the north-west coast. Mr Douglas captured some in April 1825, and several more during the winters of 1826 and 1827. The birds from the last named locality appeared larger, with the general colours more distinct, and a broader marking of white at the extremity of the tail. A few seasons ago Mr Sabine received specimens of this kind, through the Hudson's Bay Company, which were supposed to have been obtained among the mountains near the sources of the river Athabasca.

“ The third species is named the smaller pheasant-tailed grouse, (*Tetrio urophasianellus*), a beautiful bird, nearly allied to the pin-tailed grouse of Latham (*Tetrao phasianellus*.) The general colour is pale brown, richly barred and blotched with black, particularly on the back and scapulars, where the black forms the prevailing portion of the plumage. The wing-coverts are marked with subrounded pale spots, and the outer webs of the primary quill-feathers are also marked with many almost colourless spots of a rounded or oblong figure. The sexes resemble each other in their plumage. The tail of the male is more fully developed, and his dimensions exceed those of the female.

“ The flight of this species is swift, steady, and almost noiseless. Their habits approach closely to those of the large species first described. They inhabit the same country, form their nests after the same fashion, and, in similar situations, subsist on the same food, and, produce their young at the same season. The number of eggs varies from eleven to fifteen. Of these the colour is light ash, and their size does not much exceed

dingy white, with red spots, and vary in number from nine to eleven.

“These birds are not so common as some of the others. For a short time during early spring, they associate in that bounds our gardens, &c. ; in all which places, and without the least consideration of site or season, it will collect a great mass of straws and hay, and gather a profusion of feathers from the poultry yard, to line its nest. This cradle for its young, whether under our tiles in March or in July, when the parent bird is panting in the common heat of the atmosphere, has the same provisions made to afford warmth to the brood ; yet this is a bird that is little affected by any of the extremes of our climate. The wood pigeon and the jay, though they erect their fabrics on the tall underwood in the open air, will construct them so slightly, and with such a scanty provision of materials, that they seem scarcely adequate to support their broods ; and even their eggs may almost be seen through the loosely connected materials ; but the goldfinch, that inimitable spinner, the *Arachné* of the grove, forms its cradle of fine mosses and lichens, collected from the apple or the pear tree, compact as a felt, lining it with the down of thistles besides, till it is as warm as any texture of the kind can be, and it becomes a model for beautiful construction. The golden-crested wren, a minute creature, perfectly unmindful of any severity in our winter, and which hatches its young in June, the warmer portion of our year, yet builds its nest with the utmost attention to warmth ; and, interweaving small branches of moss with the web of the spider, forms a closely compacted texture, nearly an inch in thickness, lining it with such a profusion of feathers, that, sinking deep into this downy accumulation, it seems almost lost itself when sitting, and the young, when hatched, appear stifled with the warmth of their bedding, and the heat of their apartment ; while the whitethroat, the blackcap, and others, which will hatch their young nearly at the same period, or in July, will require nothing of the kind. A few loose bents and goose grass, rudely entwined with perhaps the luxury of some scattered hairs, are perfectly sufficient for all the wants of these ; yet they are birds that live only in genial temperatures, feel nothing of the icy gales that are natural to our pretty indigenous artists, but flit from sun to sun, and, we might suppose, would require much warmth in our climate during the season of incubation ; but it is not so. The greenfinch places its nest in the hedge, with little regard to concealment ; its fabric is slovenly and rude, and the materials of the coarsest kinds ; while the chaffinch, just above it in the elm, hides its nest with cautious care, and moulds it with the utmost attention to order, neatness, and form. One bird must have a hole in the ground ; to another, a crevice in the wall, or a chink in a tree, is indispensable. The bullfinch requires fine roots

small flocks, rarely exceeding eight or twelve. At other seasons it seldom happens that more than three or four are seen together. This species exhibits a remarkably strong attachment to its young. When the hunter approaches the spot where the brood lie concealed, the mother usually sallies forth in the greatest rage, with the tail broadly spread, the wings buzzing and rubbing on the ground, and the shoulder-knots raised; and in this grotesque condition she continues to run backwards and forwards, in a state of the most anxious solicitude, within a few yards of the sportsman, whose feelings are probably in no way softened by such an exhibition of maternal tenderness.

"Sabine's grouse not only resembles *Tetrao umbellus* in the prevailing characters of its plumage, but also in its habit of perching on stumps of decayed trees in the darkest parts of the forest, and there performing the singular operation called *drumming*, which is effected by giving two or three loud distinct slaps with the wings, followed by many others, which become quicker

for its nest; the gray flycatcher will have cobwebs for the outworks of its shed. All the parus tribe, except the individual above mentioned, select some hollow in a tree, or cranny in a wall; and, sheltered as such places must be, yet will they collect abundance of feathers, and warm materials for their infants' beds. Endless examples might be found of the dissimilarity of requirements in these constructions among the several associates of our groves, our hedges, and our houses; and yet the supposition cannot be entertained for a moment, that they are superfluous, or not essential, for some purpose with which we are unacquainted.*

* "I remember no bird that seems to suffer so frequently from the peculiar construction of its nest, and, by reason of our common observance of its sufferings, obtains more of our pity, than the house martin. The rooks will at times have their nests torn from their airy site, or have their eggs shaken from it by the gales of spring, but the poor martin, which places its earthy shed beneath the eave of the barn, the roof of the house, or in the corner of the house window, is more generally injured. July and August are the months in which these birds usually bring out their young, but one rainy day at this period, attended with wind, will often moisten the earth that composes the nest, the cement then fails, and all the unfledged young ones are dashed upon the ground, and there are some places to which these poor birds are unfortunately partial, though their nests are annually washed down. The projecting thatch of the old farm-house appears to be their safest asylum. The parent birds at times seem aware of the misfortune that awaits them, as, before the calamity is completed, we may observe them with great anxiety hovering about their nests." — *Knapp*.

and quicker, until the noise appears to die away in the distance, like the sound of a muffled drum. The true voice is a continuation of measured sounds, not unlike the ticking of a large clock. This very interesting and beautiful species was discovered by Mr Douglas in the woody parts of the coast of Northwest America, between the parallels of 40° and 49°, from Cape Mendocina on the south, to the Straits of Juan de Fuca, Quadra, and Vancouver's Island, on the north.

“ The fifth and last species to be noticed, though of smaller dimensions, is certainly not inferior in beauty to any of its predecessors : of this I am as yet acquainted only with the male. The species which it resembles most nearly is the Canada grouse, *Tetrao canadensis*. The general plumage is dark and glossy, and composed of alternate bars of black and grayish brown ; the head, neck, and breast, are almost black ; the tail is entirely black ; the upper and under tail-coverts are black, terminated by a large white spot ; and the lateral parts of the abdomen are likewise spotted with white.

“ Mr Douglas states that there is nothing very peculiar in the manners of this bird. Its flight is similar to that of the last mentioned species. It runs over the shattered rocks, and among the brushwood, with amazing speed, and only uses its wings as a last effort to escape. Like the others, it builds on the ground, not unfrequently at the foot of decayed stumps, or by the side of fallen timber in the mountain woods. The nest is composed of dead leaves and grass, and contains from five to seven eggs, of a dingy white colour, and not larger than those of our wood pigeon.

“ The alarm note of this bird is composed of two or three hollow sounds, ending in a disagreeable grating noise, like the latter part of the cry of the well known guinea fowl. It is said to be one of the most common birds in the valleys of the Rocky Mountain, from lat. 50° to 54°, near the sources of the Columbia River. It probably inhabits still higher latitudes. Small flocks

were seen on the high mountains which form the base, or platform, of the snowy peaks, Mount Hood, Mount St Helens, and Mount Baker, on the western parts of the continent.

"This species is named Franklin's grouse, *Tetrao Franklinii*, (Rocky Mountain spotted grouse,) in honour of the distinguished commander of the overland arctic expeditions.

"I have little doubt that some of these birds might be imported into this country, of which the soil, climate, and natural productions, are not so dissimilar to those of their native regions, as to preclude the hope of a successful issue to an experiment of a very interesting nature, which the wealth and zeal for field-sports inherited by many of our aristocracy, would render easy, and which might eventually prove of more substantial and permanent advantage. Their importation to the upland valleys of our Scottish mountains, would certainly form a fine addition to the feathered game of Great Britain."

The following is Brehm's arrangement of the German grouse :—

GENUS I — *Tetrao*. — *Linn*

First Division.

Grouse with the tail rounded. *Tetraones cauda rotundata*

1. Flat crowned capercalzie *T. urogallus* — *Linn*.
2. Great capercalzie *T. major* — *Br*
3. Thick billed capercalzie. *T. crassirostris* — *Brehm*
4. Spotted capercalzie *T. maculatus*. — *Brehm*

Second Division

Grouse with bifurcated tail *Tetraones cauda bifurcata*

1. Middle grouse *Tetrao medius*. — *Leisler*
2. Juniper grouse. *T. juniperorum* — *Brehm*.
3. Thin billed birchwood grouse, or black cock. *T. tetrix* — *Linn*.
4. Heath grouse. *T. ericæus* — *Brehm*

GENUS II — *Bonasia*. — *Briss* Hazel hen

1. Rock hazel hen. *B. rupestris*. — *Brehm*
2. Wood hazel hen. *B. sylvestris*. — *Brehm*.

GENUS III. — *Lagopus*. — *Briss*. Snow hen, or ptarmigan

1. Mountain snow hen, or ptarmigan *L. montanus* — *Brehm*
2. Morass snow hen, or ptarmigan. *L. subalpinus*. — *Brehm*

42. *ANAS*, OR GOOSE TRIBE.

"THE arrival of the birds of this genus in the fur countries marks the return of spring, and diffuses as much joy among the wandering hunters of the Arctic regions, as the harvest or vintage excites in more genial climes. It is an event of great importance to the natives, as it affords them a supply of food at a season when the moose and deer hunting is impeded by the floods of melting snow. The larger species, or geese, have been principally attended to, and are observed to follow determinate routes in their progress northward, and to halt regularly at certain stations. Their return in autumn is also by passes well known to the natives, but not always in the same line with their spring movements. Actuated in the beginning of the season by an impulse which hurries them to the breeding stations, they remain at their resting places only long enough to admit of the country to the northward being properly thawed for their reception; but during these rests, which are seldom prolonged beyond eight or ten days, they become very fat, although on their first arrival they are always lean. Their movements to the northward are sometimes premature; and after having left a station, they occasionally return to it for a few days. Such an event is always followed by cold frosty weather, or severe snow storms. When they return in autumn, their migrations being more exclusively regulated by the supplies of food they can obtain, their halt in the marshy districts through which the Saskatchewan, and its continuation, Nelson's River, flow, and on the low shores of the southern parts of Hudson's Bay, is more considerable, and is terminated by the freezing of the marshes. This period forms the principal goose hunt of the Crees, who are the only

natives that frequent those swampy districts. In the barren grounds, on the other hand, frequented by the northern Indians, or Chepewyans, the spring goose hunt is the most productive.

“ The only geese seen in numbers in the interior of the country are the Canada goose, (*Anas canadensis*,) the laughing goose, (*Anas albifrons*,) and the snow goose, (*Anas hyperborea*.) The distinct notes of these three species are well imitated by the Indians, who thus are very successful, in the spring, in bringing them within gun-shot. In the autumn, the geese do not so readily answer the call; and it is necessary that the sportsman should conceal himself, and use some dead birds as a decoy. The reported long life of some of the species of this group we can neither confirm nor deny.*

* *Longevity of Animals.* — “ Of the natural duration of animal life, it is, from many circumstances, difficult to form an accurate statement, the wild creatures being in a great measure removed from observation, and those in a condition of domestication being seldom permitted to live as long as their bodily strength would allow. It was formerly supposed that the length of animal life was in proportion to its duration in utero, or the space it remained in the parent from conception to birth, and the length of time it required to obtain maturity. This notion might have some support in reason and fact occasionally, but in many cases was incorrect, and, in regard to birds, had no foundation. Herbivorous animals probably live longer than carnivorous ones, vegetable food being most easily obtainable in all seasons, in a regular and requisite supply; whereas animals that subsist on flesh, or by the capture of prey, are necessitated, at one period, to pine without food, and, at another, are gorged with superfluity: and when the bodily powers of rapacious creatures become impaired, existence is difficult to support, and gradually ceases; but with herbivorous animals, in the same condition, supply is not equally precarious, or wholly denied. Yet it is probable that few animals, in a perfectly wild state, live to a natural extinction of life. In a state of domestication, the small number of carnivorous creatures about us are sheltered and fed with care, seldom are in want of proper food, and at times are permitted to await a gradual decay, continuing as long as nature permits, and by such attentions many have attained to a great age; but this is rather an artificial than a natural existence. Our herbi-

"The Canada goose, termed by the Canadian voyagers *Poutarde*,* and by the Crees *neescah*, arrives first of the three species just mentioned. It breeds every where throughout the Hudson's Bay territory, and was observed, in the middle of July, on the Copper Mine River, not far from its debouchure, accompanied by its newly hatched young. The cry of this species is imitated by a nasal repetition of the syllable *wook*, or, as Wilson writes it, *honk*.

"The following table of the arrival of this species, in different parallels of latitude, in the interior of the

voracious animals, being kept mostly for profit, are seldom allowed to remain beyond approaching age, and, when its advances trench upon our emoluments, by diminishing the supply of utility, we remove them. The uses of the horse, though time may reduce them, are often protracted, and our gratitude for past services, or interest in what remains, prompts us to support his life by prepared food of easy digestion, or requiring little mastication, and he certainly by such means attains to a longevity probably beyond the contingencies of nature. I have still a favourite pony — for she has been a faithful and able performer of all the duties required of her in my service for upwards of two-and-twenty years — and, though now above five-and-twenty years of age, retains all her powers perfectly, without any diminution or symptom of decrepitude; the fineness of limb, brilliancy of eye, and ardour of spirit, are those of the colt, and, though treated with no remarkable care, she has never been disabled by the illness of a day, or sickened by the drench of the farrier. With birds it is probably the same as with other creatures, and the eagle, the raven, the parrot, &c. in a domestic state, attain great longevity, and, though we suppose them naturally tenacious of life, yet, in a really wild state, they would probably expire before the period which they attain when under our attention and care. And this is much the case with man, who probably outlives most other creatures, for though excess may often shorten, and disease or misfortune terminate his days, yet naturally he is a long-lived animal. His 'threescore years and ten' are often prolonged by constitutional strength, and by the cares, the loves, the charities, of human nature. As the decay of his powers awaken solicitude, duty and affection increase their attentions, and the spark of life only expires when the material is exhausted." — *Knapp*.

* This is the bustard of Messrs Jerome and De la Poitries, who have been so much censured by Hearne, for asserting its existence. See *Journey to the Northern Ocean*, p. 417.

country, is derived chiefly from the journals kept by the traders :—

Engineer Cantonment, Lat. $41\frac{1}{2}^{\circ}$,	22d of February. *
Cumberland House,	54° from the 8th to the 12th of April.
Athabasca Lake,	59° about the 20th–25th of April.
Slave Lake,	61° about the 1st–6th of May.
Fort Enterprise,	$64^{\circ} 30''$ about the 12th–20th of May.

“ The results of registers for various years kept at Fort Churchill, on Hudson’s Bay, lat. 59° , give the 27th of April and 14th of May as the earliest and latest arrivals of different seasons. Their eggs have been found as early as the 15th of May. They collect in the marshes of that neighbourhood in some autumns as early as August 16th, and depart about September 10th, rarely continuing until October 10th, which is considered as a very late fall.

“ The other two species seen in the interior arrive in separate flocks, generally about six or eight days after the Canada geese. One of these, the laughing goose, keeps the middle part of the continent in its migrations, and is rarely seen on the coast of Hudson’s Bay. Its breeding station is to the northward even of the resorts of the snow goose, and is still unknown to the Europeans. The note of this bird has some resemblance to the laugh of a man, and from this its name has been derived, and not as Wilson supposes, from the grinning appearance of its mandibles. The Indians imitate its cry by moving the hand quickly against the lips, whilst they repeat the syllable *wah*.

“ The snow goose, in its migration northwards, is seen both in the interior and on the sea-coast, and in numbers exceeding the other two.

“ The brent goose (*Anas bernicla*) is found only on the coast of Hudson’s Bay; and the barnacle, (*Anas*

* In Long’s *Expedition to the Rocky Mountains*, the great migration of geese is stated to commence at Engineer Cantonment, in lat. $41\frac{1}{2}^{\circ}$ on the 22d of February, and to terminate at the latter end of March.

leucopsis.) and the bean goose, (*Anas segetum*.) the remaining two species of geese known to visit those countries, are rarely seen, being accidental visitors.

"The swans arrive in the fur countries still earlier than the Canada goose, and frequent the eddies under waterfalls, and other spots of open water, until the rivers and lakes break up. They are seen both in the interior and on the sea coast, sometimes in small flocks, but more frequently in pairs.

"Of the smaller birds, or ducks, that constitute the genus *anas*, there are about twenty-four species known in the Hudson's Bay fur countries, only three of which were seen by our navigators. Two of these three, the eider and king ducks, confine their visits to the sea coast; but the third, the long-tailed duck, (*Anas glacialis*.) is seen also abundantly in the interior, on its passage north."

CYGNUS, SWAN

43. *CYGNUS BUCCINATOR*, RICHARDSON. — TRUMPETER SWAN.

SUB FAMILY, *Anserinae*, *Swains*. — Genus, *Cygnus*, *Auct.* — Keetchee wapeeshew, *Cree Indians*. — CH. SP. *Anas* (*Cygnus*) *Buccinator*, *albus*, *rostrum toto nigro et tuberculato*, *rectricibus* 24. — SP. CH. Trumpeter Swan, white, head glossed above with chestnut; bill, entirely black, without a tubercle; tail feathers, 24.

"THIS is the most common swan in the interior of the fur countries. It breeds as far south as lat. 61°, but principally within the Arctic circle; and, in its migrations, generally precedes the geese a few days. A fold of its windpipe enters a protuberance on the dorsal aspect of the sternum, at its upper part, which is wanting both in the *Cygnus ferus* and *Bewickii*; in other respects, it is distributed through the sternum, nearly as in the latter of these species. It is to the trumpeter the bulk of the swan skins imported by the Hudson's Bay Company belong." — *Richardson*.

44. *CYGNUS BEWICKII*, YARRELL. — BEWICK'S SWAN.

GENUS, *Cygnus*, *Auctor.* — CH. SP. *Cygnus Bewickii*, albus, rostro nigro pone nares flavescenti, rectricibus 18. — SP. CH. Bewick's Swan, white; bill, yellow at the base posterior to the nostrils, 18 tail feathers.

" THIS swan breeds on the sea coast, within the Arctic circle, and is seen in the interior of the fur countries in its passage only. It makes its appearance amongst the latest of the migratory birds in the spring, while the trumpeter swans are, with the exception of the eagles, the earliest. It winters, according to Lewis and Clark, near the mouth of the Columbia.* Captain Lyon describes its nest as built of moss peat, nearly six feet long, and four and three-quarters wide, and two feet high, exteriorly; the cavity, a foot and a half in diameter. The eggs were brownish white, slightly clouded with a darker tint." — *Richardson*.

CLANGULA, GARROT45. *CLANGULA BARROWII*. — ROCKY MOUNTAIN GARROT.

Head, and upper part of the neck, pansy purple, with a large crescentic white mark before each eye. White speculum separated from the band on the coverts by a black stripe. Inhabits the Rocky Mountains. The specific name is intended as a tribute to Mr Barrow's varied talents, and his unwearied exertions for the promotion of science. Mr Swainson remarks, on the subject of zoological nomenclature, that " No monument of marble or brass is so lasting as this. It is the only way of perpetuating the memories of *true* zoolo-

* " The swans are of two kinds, — the large and small. The large swan is the same with the one common in the Atlantic States. The small differs from the large only in size and note; it is about one-fourth less, and its note is entirely different. These birds were first found below the Great Narrows of the Columbia, near the Chilluckittequaw nation. They are very abundant in this neighbourhood, and remained with the party all winter; and, in number, they exceed those of the larger species in the proportion of five to one." — LEWIS and CLARK, *Journ. &c.*

gists, or of those who have benefited the science. Latterly, however, the custom among us has been so much abused, that it may be questioned whether it expresses any thing more than a mere compliment from the nomenclator. To bestow the same honour upon a mere collector, which is given to a Wilson, a Cuvier, or a Bonaparte, is, at best, injudicious; but, to call all the new species in the museum of a learned society after the council and office-bearers of the current year, merely because they are *ex officio* promoters of ornithology, is not only ludicrous, but, as we conceive, a total perversion of scientific justice. A great and pious divine, a skilful and eminent physician, or accomplished diplomatic character, can receive neither honour or pleasure from such flattery. It behoves every true naturalist to set his face against such practices; and we shall, upon all occasions, pass over every name so misapplied. For ourselves, we have studiously sought to bestow this 'honour' only where it was due. The name of Barrow, it is true, will not be solely indebted to us for its imperishable record. It will be associated, by the future historian, with the history and discoveries of Arctic America, Southern Africa, and China; with high benefits conferred upon the State; and with the *possession and encouragement* of zoological knowledge."

The following has been communicated to us as Brehm's latest arrangement of the European species of the Anatidæ:—

Anatidæ. *Leach.*

GENUS I.

Swan. *Cygnus.*

First Division.

Gibbous swans. *Cygni gibbi.*

1. White headed gibbous swan. *C. gibbus*, Bechst.
2. Yellow headed gibbous swan. *C. olor*, Illger.

Second Division.

Singing swans. *Cygni musici.*

1. Northeastern singing swan. *C. musicus*, Bechst.
2. Icelandic singing swan. *C. islandicus*, Brehm.

GENUS II.

Goose. Anser, *Brisson, Boje.**First Division.*Gray geese. *Anseres cinerei.*

1. German gray goose. *A. cinereus*, Meyer.
2. Northern gray goose. *A. sylvestris*, Brisson.

*Second Division.*Bean geese. *Anseres segetum.*

1. Broad tailed bean goose. *A. platyuros*, Brisson.
2. True bean goose. *A. segetum*, Meyer.
3. Rufous bean goose. *A. rufescens*, Brisson.
4. Field goose. *A. arvensis*, Brisson.
5. Obscure bean goose. *A. obscurus*, Brisson.
6. Bruck's bean goose. *A. Bruckii*, Brisson.

*Third Division.*White-fronted geese. *Anseres fronte albo.*

1. Large white fronted goose. *A. albifrons*, Bechst.
2. Small white fronted goose. *A. brevirostris*, Heckel.

*Fourth Division.*Dwarf geese. *Anseres pygmaei.*

1. Gray dwarf goose. *A. cineraceus*, Brisson.

GENUS III.

Bernacle, or Sea goose. *Bernicla, Boje.**First Division.*Small billed bernacles. *Bernicla microrhynchoi.*

1. White cheeked bernacle. *B. leucopsis*, Bechst.

*Second Division.*Ringed bernacles. *Berniclae torquatae.*

1. Gray bellied ringed bernacle. *B. glaucogaster*, Brisson.
2. Small footed ringed bernacle. *B. micropus*, Brehm.
3. Broad tailed ringed bernacle. *B. platyuros*, Brisson.
4. Short billed ringed bernacle. *B. torquata*, Boje.
5. Long billed ringed bernacle. *B. collaris*, Brehm.

*Third Division.*Red-necked bernacles. *Berniclae collo rufo.*

1. Red-necked bernacle. *B. ruficollis*, Boje.

GENUS IV.

Sheldrake, or goose duck. *Tadorna, Boje.*

First Division.

Snowy sheldrakes. *Tadornæ nivæ.*

1. Northern sheldrake. *T. nivæ*, Brehm.

Second Division.

Variegated sheldrakes. *Tadornæ varinæ.*

1. Egyptian sheldrake. *T. egyptica*, Boje.

Third Division.

Maritime sheldrakes. *Tadornæ maritimæ.*

1. Gibbous sheldrake. *T. gibbera*, Brehm.
2. Littoral sheldrake. *T. littoralis*, Brehm.
3. Sea sheldrake. *T. maritima*, Brehm.

Fourth Division.

Red sheldrakes. *Tadornæ rubræ.*

1. Red sheldrake. *T. rubra*, Brehm.

GENUS V.

Duck. *Anas*, *Linnaeus*, *Brisson*, *Leach*, *Boje*, *Brehm*.

First Division.

Stock ducks. *Anates reatricibus medius recurvis*

1. Great stock duck. *An. archiboschas*, Brehm.
2. True stock duck. *An. boschas*, *Linnaeus*.
3. Icelandic stock duck. *An. subboschas*, Brehm.
4. Greenland stock duck. *An. conboschas*, Brehm.

Second Division.

Pintail ducks. *Anates cauda cuneata.*

1. Small billed pintail duck. *A. acuta*, *Linnaeus*.
2. Broad billed pintail duck. *A. longicauda*, Brehm.
3. American pintail duck. *A. caudata*, Brehm.

Third Division.

Gadwalls. *Anates streperæ.*

1. Great billed gadwall. *A. strepera*, *Linnaeus*.
2. Small billed gadwall. *A. cinerea*, *Gmelin*.

Fourth Division.

Wigeons, or whistling ducks. *Anates fistulantes.*

1. Great billed wigeon. *A. kagolka*, *Gmelin*.
2. Small billed wigeon. *A. fistularis*, *Gesner*.
3. Short billed wigeon. *A. penelope*, *Linnaeus*.

GENUS VI.

Shoveller, or shoveller duck. *Clypeata*, *Boje*, *Brehm*.

1. Long billed shoveller. *Cl. macrorhynchos*, Brehm.
2. Broad billed shoveller. *Cl. platyrhynchos*, Brehm.

3. Pomarine shoveller. *Cl. pomarina*, Brehm.
4. Short billed shoveller. *Cl. brachyrhynchos*, Brehm.

GENUS VII.

Garganey, or garganey duck. *Querquedula*, *Boje*.

First Division.

Garganays, properly so called. *Querquedulae*, *proprie sic dictæ*.

1. Great garganey. *Qu. cucula*, Brehm.
2. Blue winged garganey. *Qu. glaucopteros*, Brehm.
3. Small garganey. *Qu. scapularis*, Brehm.

Second Division.

Teal garganays. *Querquedulae creccæ*.

First Subdivision. European T. garganays.

1. Small billed teal garganey. *Qu. crecca*, *Boje*.
2. Middle teal garganey. *Qu. subcrecca*, Brehm.
3. Short billed teal garganey. *Qu. creccoides*, Brehm.

Second Subdivision. American teal garganays.

1. North American. *Qu. americana*, Brehm.
2. Greenland teal garganey. *Qu. groenlandica*, Brehm.

GENUS VIII.

Eider duck. *Somateria*, *Leach*.

First Division.

True eider ducks. *Somateria*, *proprie sic dictæ*. (*Anas mollissima*, *Linnaeus*).

1. Danish eider duck. *S. Danica*, Brehm.
2. Norwegian eider duck. *S. Norwegica*, Brehm.
3. Broad tailed eider duck. *S. platyuros*, Brehm.
4. Faro eider duck. *S. Faroensis*, Brehm.
5. Large tailed eider duck. *S. megauros*, Brehm.
6. Icelandic eider duck. *S. Islandica*, Brehm.
7. Northern eider duck. *S. borealis*, Brehm.
8. Leisler's eider duck. *S. Leisleri*, Brehm.
9. Flat fronted eider duck. *S. planifrons*, Brehm.

GENUS IX.

Scoter, or black duck. *Melanitta*, *Boje*.

First Division.

True scoter ducks. *Melanittæ nigrae*.

1. Black footed scoter duck. *Mel. nigripes*, Brehm.
2. Large tailed scoter duck. *Mel. megauros*, Brehm.
3. Broad gibbous scoter duck. *Mel. gibbera*, Brehm.
4. Small tailed scoter duck. *Mel. nigra*, *Boje*.

Second Division.

Velvet scoter ducks. *Melanittæ fuscæ*.

1. Hornschuch's velvet scoter duck. *Mel. hornschuchii*, Brehm.
2. True velvet scoter duck. *Mel. fusca*, Boje.
3. Large footed velvet scoter duck. *Mel. megapus*, Brehm.
4. Broad billed velvet scoter duck. *M. platyrhynchos*.

GENUS X.

Moor duck. *Aythya*, *Boje*.

First Division.

Rowing moor ducks. *Aythya remigantes*.

1. White headed moor duck. *A. leucocephala*, Brehm.

Second Division.

Scaup, or hill-moor ducks. *Aythya montanæ*.

1. Icelandic scaup duck. *A. islandica*.
2. Curved billed scaup duck. *A. marila*, Lin.
3. White backed scaup duck. *A. leucanotos*, Brehm.

Third Division.

Tufted moor ducks. *Aythya cristatæ*.

1. Broad billed tufted duck. *A. fuligula*, Boje.
2. Small billed tufted duck. *A. cristata*, Brehm.

Fourth Division.

White eyed moor ducks. *Aythya iridibus albis*.

1. Eastern white eyed moor duck. *A. leucophthalmos*, Brehm.
2. Northern white eyed moor duck. *A. nyroca*, Boje.

Fifth Division.

Pochard ducks. *Aythya sapidissimæ*, (*Anas ferina*, Lin.)

1. Red headed pochard. *A. erythrocephala*, Brehm.
2. Reddish brown headed pochard. *A. ferina*, Boje.

GENUS XI.

Buffel duck. *Callichen*, Brehm.

1. Red headed buffel duck. *C. rubiceps*, Brehm.
2. Yellow headed buffel duck. *C. rufinus*, Brehm.
3. Small tailed buffel duck. *C. sub-rufinus*, Brehm.
4. Small footed buffel duck. *C. micropus*, Brehm.

GENUS XII.

Garrot. *Clangula*, *Boje*.

First Division.

True garrots. *Clangulæ veræ*.

1. Icelandic garrot. *Cl. scapularis*, Brehm.

2. Peregrine garrot. Cl. peregrina, Brehm.
3. Short billed garrot. Cl. glaucion, Brehm.
4. Small billed garrot. Cl. angustirostris, Brehm.

Second Division.

Glacial garrots. Clangulæ glaciales.

1. Icelandic glacial garrot. Cl. hiemalis.
2. Faber's gl. garrot. Cl. Faberi, Brehm.
3. Large tailed gl. garrot. Cl. megauros, Brehm.
4. Short tailed gl. garrot. Cl. musica, Brehm.
5. Broad billed gl. garrot. Cl. glacialis, Brehm.
6. Short billed gl. garrot. Cl. brachyrhynchos, Brehm.

GENUS XIII.

Goosander. Mergus.

First Division.

White goosanders, or smews. Mergi albelli, (Mergus albellus, Lin.)

1. Large white smew. M. albellus, Lin.
2. Small white smew. M. minutus, Lin. and Brehm.

Second Division.

Goosanders. Mergi merganser, (Mergus merganser, Lin.)

1. Icelandic goosander. M. merganser, Lin.
2. Northeastern goosander. M. castor, Lin. and Brehm.

Third Division.

Mergansers. Mergi longirostres, (Mergus serrator, Lin.)

1. High crowned long billed merganser. M. serrator, Lin.
2. Flat crowned long billed merganser. M. leucomelas, Lin. and Brehm.

LARUS, GULL.

46. LARUS BRACHYRHYNCHUS, RICHARDSON.

SHORT-BILLED MEW GULL.

GENUS, Larus, Linn. — CH. SP. *Larus brachyrhynchus*, rostro abbreviato crassiusculo, tarso vix bi-unciali, remigibus apice concoloribus; spatio albo duorum exteriorum abbreviato: rachidibus nigrescentibus. — SP. CH. Short-billed Mew Gull, with a short, thickish bill; a tarsus scarcely two inches long; quills, not tipped with white; a short white space on the two exterior ones, and blackish shafts.

"OUR specimen of this gull is a female, killed on the 23d of May, 1826, at Great Bear Lake. Some brow"

markings on the tertiaries, primary coverts, and bastard wing, with an imperfect sub-terminal bar on the tail, point it out as a young bird, most probably commencing its second spring. The rest of its plumage corresponds with that of *L. zonorhynchus*, except that it wants the extreme white tips of the quill feathers, which, on the third and following ones, are very conspicuous in *L. zonorhynchus*. It differs, however, remarkably in its bill being shorter, though considerably stouter than that of our *L. canus*; and, like it, it is wax yellow, with a bright yellow *rixtus* and point. Its tarsus is nearly one third shorter than that of *L. zonorhynchus*. Many may be disposed to consider this as merely a local variety of *L. canus*; and it might be urged, in support of this opinion, that there are considerable differences in the length and thickness of the bills of individuals of the common and winter gulls killed on the English coasts, which are all usually referred to *L. canus*. We have judged it advisable, however, to call the attention of ornithologists to these American birds, by giving them specific names, leaving it to future observation to determine whether they ought to retain the rank of species, or be considered as mere varieties." — *Richardson*.

47. *LARUS FRANKLINII*, NOBIS. — FRANKLIN'S ROSEY GULL.

GENUS, *Larus*, *Linn.* — *Larus atricilla*, (laughing gull.) *SAB. Frankl. Journ.* p. 695; * detailed description. — *CH. SP. Larus Franklini*, rostro pedibusque miniatis, dorso alisque perlaceo-cinereis, remigibus quinque exterioribus nigro latè fasciatis. remige priori apice unciali albo, tarso viginti lineis longo; cucullo æstate nigro. — *SP. CH.* American laughing gull, with vermilion bill and feet; mantle, pearl gray; five exterior quills, broadly barred with black, the first one tipped with white for an inch; tarsus, twenty lines long; hood, black in summer.

"THIS is a very common gull in the interior of the fur countries, where it frequents the shores of the

, * Mr Sabine observes, that this is the *L. atricilla* of Linnæus, but not of Temminck. — R.

larger lakes. It is generally seen in flocks, and is very noisy. It breeds in marshy places. Ord's description of his black-headed gull, (Wilson, vol. ix. p. 89—present edition, vol. iii. p. 161,) corresponds with our specimens, except that the conspicuous white end of the first quill is not noticed: the figure, (pl. 74, fig. 4.) differs in the primaries being entirely black.* The Prince of Musignano gives the totally black primaries, and a tarsus nearly two inches long, as part of the specific character of his *L. atricilla*, to which he refers Wilson's bird; though, in his *Observations*, he states, that the adult specimens have the primaries, with the exception of the first and second, tipped with white. *L. franklinii* cannot be referred either to the *L. atricilla* or *L. melanocephalus* of M. Temminck: the first has a lead-coloured hood, and deep black quill feathers, untipped by white; and the black hood of the second does not descend lower on the throat than on the nape; its quill feathers are also differently marked, and its tarsus is longer. His *L. ridibundus* and *capistratus* have brown heads, and the interior of the wings gray; the latter has also a much smaller bill than our *L. franklinii*."—*Richardson*.

48. *LESTRIS RICHARDSONII*, SWAINS. — RICHARDSON'S JAGER.

GENUS, *Lestris*, *Illig.* — CH. SP. *Lestris Richardsonii*, subconcolor, rectricibus mediis abruptè accuminatis, tarsis nigris posticè asperis viginti-duas lineas longis. — SP. CH. Richardson's jager, whole plumage, brown; two middle tail feathers, abruptly accuminated; tarsi, black, twenty-two lines long.

"THIS specimen appears to us to be in full and mature plumage; we cannot, therefore, view it as the young, or even as the female, of the *Lestris buffoni* of Bojë, which we only know from the characters assigned to

* "Four American specimens of *L. atricilla* are now before me. It is a larger, and a totally different species. The three outer quills are wholly black; the fourth tipped for about one inch, and the fifth for half an inch, with black; the extreme white spot at the point of the five first quills is very small in some, and not seen in adult specimens, having these feathers worn."—Sw.

it by the Prince of Musignano.* According to this account, the *L. buffoni* has the bill an inch and a quarter long from the front; ours is only an inch: the tarsi are described as almost smooth, whereas in ours they are particularly rough. The adult, as figured in plate 762 of the *Pl. Enl.* has the chin, throat, and sides of the neck quite white; but, in our bird, these parts are of the same pure and decided tint as that of the body, except that the ear feathers, and a few lower down the neck, have a slight tinge of ochre. The tarsi also, in both the plates cited by the Prince, are coloured yellow. These differences, with the more important one exhibited in the feet, will not permit us to join these birds under one name. Another distinction, which must not be overlooked, is in the colour of the feet. Edwards expressly says of his 'Arctic Bird,' (pl. 149, which much more resembles ours than that figured on the plate immediately preceding,) that 'the legs and toes are all yellow;' whereas, in our bird, these members are of a deep and shining black; while the hinder parts of the tarsi, toes, and connecting membrane, are particularly rough." — Sw.

"This jager breeds in considerable numbers in the barren grounds, at a distance from the coast. It feeds on shelly mollusca, which are plentiful in the small lakes of the fur countries; and it harasses the gulls in the same way with others of the genus." — *Richardson*.

* "*Lestris buffonii*, *Boyd.* Bill, one inch and a quarter from the front, straight, notched; middle tail feathers, gradually tapering, narrow for several inches, ending in a point; tarsus, one inch and a half long, almost smooth. — Adult, brown, neck, and beneath, white, the former tinged with yellow. — Young, wholly brownish.

"Arctic bird, *EDW.* pl. 148; *BUFF. Pl. Enl.* 762. *Lestris cicipidata*, *BREHM.*" — *BONAP. Syn.* No. 306.

The following is Brehm's arrangement of the European gulls :—

Gulls. Laridæ. — *Leach*.

GENUS I.

Rapacious gull, or jager. *Lestris*. — *Illiger*.

First Division.

Rap gulls without acuminate tail *Lestrises reetricibus fere æqualibus*.

- 1 Giant skua. *L. cataractes*, Illiger and Brehm
- 2 Great skua. *L. skua*, Brehm.

Second Division.

Lestrises reetricibus mediis retorsis.

- 1 *Lestris spærinros*, Brehm.

Third Division.

Parasitic rapacious gulls *Lestrises parasiticæ*

- 1 Boje's rapacious gull *L. Boje*, Brehm.
- 2 Schleep's rap. gull. *L. Schleepi*, Brehm
- 3 Long-winged rap gull *L. macropteros*, Brehm.
- 4 Parasitic gull *L. parasitica*, Boje.
- 5 Benicke's rap gull. *L. Benicki*, Brehm.
- 6 Rock rap gull *L. crepidata*, Brehm
- 7 Small-billed rap. gull. *L. microrhynchos*, Brehm.

GENUS II.

Gull. *Larus*. — *Lin. Boje*, and Brehm.

First Division.

Black-backed gulls *Lari dorso nigro*.

- 1 Great gull *L. maximus*, Brehm
- 2 Muller's gull. *L. Mulleri*, Brehm.
- 3 Fabricius's gull *L. Fabricii*, Brehm.
- 4 Black-backed gull. *L. marinus*, Lin and Brehm.

Second Division.

White-winged gulls. *Lari leucopteroi*

- 1 Ice gull *L. glacialis*, Benicke.
- 2 Great white-winged gull. *L. glaucus*, Brunn
- 3 Burgo-master gull *L. consol*, Boje.
- 4 Small gull. *L. minor*, Brehm

GENUS III.

Darting gull *Laroides* — *Brehm*.

First Division

Silvery gulls *Lari argentati*.

- 1 Great silvery gull. *L. major*, Brehm.
- 2 True silvery gull. *L. argentatus*, Brehm.
- 2 Silvery gray gull. *L. argenteus*, Brehm.

- 4 Silvery bluish gray gull. *L. argentatoides*, Brehm.
- 5 Small silvery gull. *L. argentaceus*, Brehm.
- 6 North American silvery gull. *L. Americanus*, Brehm.

Second Division.

White winged darting gulls. *Laroidæ leucopteroi*.

- 1 Great white winged darting gull. *L. glaucoides*, Brehm.
- 2 Middle sized white winged darting gull. *L. leucopteros*, Brehm.
- 3 High crowned white winged darting gull. *L. sub-leucopteros*, Brehm.

Third Division.

Herring gulls. *Laroidæ harengorum*.

- 1 Great herring gull. *L. melanotos*, Brehm.
- 2 Small-billed herring gull. *L. harengorum*, Brehm.
- 3 Thick-billed herring gull. *L. fuscus*, Brehm.

Fourth Division.

Storm gulls. *Laroidæ procellosi*.

- 1 Pomarine storm gull. *L. procellosus*, Brehm.
- 2 Northern storm gull. *L. canus*, Brehm.
- 3 High crowned storm gull. *L. canescens*, Brehm.

Fifth Division

Three-toed gulls. *Laroidæ tridactyli*.

- 1 Great three-toed gull. *L. tridactylus*.
- 2 Greenland three-toed gull. *L. rissa*, Brehm.
- 3 Small three-toed gull. *L. minor*, Brehm.

GENUS IV.

Swallow gull. *Xema*. — *Leach* and *Boje*.

- 1 Black-headed swallow gull. *X. melanocephalon*, Boje.
- 2 Lead gray-headed swallow gull. *X. caniceps*, Brehm.
- 3 Laughing swallow gull. *X. ridibundum*, Boje.
- 4 Capped swallow gull. *X. pileatum*, Brehm.
- 5 Capucin swallow gull. *X. capistratum*, Boje.
- 6 Small swallow gull. *X. minutum*, Boje.

GENUS V

Ivory gull. *Gavia*. — *Brisson* and *Boje*.

- 1 Great ivory gull. *G. eburnea*, Brehm.
- 2 Small ivory gull. *G. nivea*, Brehm.

GENUS VI.

Rapacious sea swallow. *Sylochelidon*: — *Brehm*.

- 1 Baltic rapacious sea swallow. *S. Balthica*, Brehm.
- 2 Schilling's rap sea swallow. *S. Schillingi*, Boje.
- 3 Caspian rap sea swallow. *S. Caspia*, Brehm.

GENUS VII.

Laughing sea swallow. *Gelocheidon*. — *Brehm*.

- 1 Baltic laughing sea swallow. *G. Balthica*, Brehm.
- 2 Southern laughing sea swallow. *G. meridionalis*, Brehm.
- 3 Land laughing sea swallow. *G. agraria*, Brehm.

GENUS VIII.

Sea swallow. *Thalasseus* — *Boje*

- 1 Whitish gray sea swallow. *Th. canescens*, Brehm.
- 2 Whitish sea swallow. *Th. candicans*, Brehm.

GENUS IX.

Tern. *Sterna*. — *Linn. Boje, and Brehm.*

- 1 Dougall's tern. *Sterna Dougalli*, Mont.
- 2 River tern. *Sterna fluviatilis*, Naum. and Brehm.
- 3 Pomarine tern. *Sterna pomarina*, Brehm.
- 4 Red-footed tern. *Sterna hirundo*, Linnæus.
- 5 Silver gray tern. *Sterna argentata*, Brehm.
- 6 Silver coloured tern. *Sterna argentacea*.
- 7 Long-tailed tern. *Sterna macroura*, Naum.
- 8 Northern tern. *Sterna arctica*, Temminck.
- 9 Nitches' tern. *Sterna Nitzschii*, Kaup.
- 10 Short-footed tern. *Sterna brachy tarsi*, Graba.

GENUS X.

Dwarf sea swallow. *Sternula*. — *Boje.*

- 1 Cloven-footed dwarf sea swallow. *Sterna fassipes*, Brehm.
- 2 Danish dwarf sea swallow. *Sterna danica*, Brehm.
- 3 Pomarine sea swallow. *Sterna pomarina*, Brehm.

GENUS XI.

Water swallow. *Hydrochelidon*. — *Boje.*

- 1 Black water swallow. *Sterna nigra*, Boje
- 2 Blackish water swallow. *Sterna nigricans*, Brehm.
- 3 Dusky water swallow. *Sterna obscura*, Brehm.
- 4 White-winged water swallow. *Sterna leucoptera*, Boje.

49. *CALYMERIS GLACIALIS*. — GREAT NORTHERN DIVER.

"THESE birds are numerous in the northern parts of the American continent. They arrive in the fur countries about the end of May, and retire to the south in October. They were frequently seen by Captain Franklin's party during their voyage on the Arctic Sea; and Captain Parry received some of their skins from the Esquimaux who visited him. They breed on the shores of small lakes, laying two eggs at a time. Their cry is loud, has a peculiarly low and melancholy tone, and, when often repeated, is said to portend rain. The Canadian voyagers never fail to make a loud hooting noise when this bird passes, for the purpose of rendering it, as they say, foolish. It is certain that it

is thus frequently induced to fly in circles round the canoe, and often attracted within gun-shot. In water, they are watchful, and dive so instantaneously, that it is difficult to shoot them. They take wing, however, with difficulty, although they fly well; and this circumstance enables the hunter to destroy great numbers of them in the spring. They arrive in that season when the ice of the lakes continues entire, except, perhaps, a small basin of open water where a rivulet happens to flow in, or where the discharge of the lake takes place. When the birds are observed to alight in these places, the hunter runs to the margin of the ice, they instantly dive, but are obliged after a time to come to the surface to breathe, when he has an opportunity of shooting them. In this way upwards of twenty were killed at Fort Enterprise in the spring of 1821, in a piece of water only a few yards square. In the summer and autumn, they are often caught in nets set for fish. The flesh of the northern diver is tough, and is eaten only through necessity."—*Richardson*.

The following is Brehm's arrangement of the grebes, divers, guillemots, tysties, rotches, coultenebs, and awks. We add also his arrangement of the petrels and pelicanidæ.

Divers. Colymbidæ. — *Leach*.

FIRST PRINCIPAL DIVISION

Feet divers. Colymbidæ non nisi pedum ope mergente.

GENUS I.

Grebe. Podiceps. — *Lath*.

First Division.

Hooded grebes. Podiceps cristati (Col. cristatus, *Linn.*)

- 1 Great-crested grebe, gaunt, or cargoose. P. cristatus.
- 2 High-crowned hooded grebe. P. mitratus, Brehm.
- 3 Flat-crowned hooded grebe. P. patagiatus, Brehm.

Second Division.

Gray-throated grebes. Podiceps subcristati.

- 1 The Danish gray-throated grebe. P. rubricollis, Latham.
- 2 Short-billed grebe. P. subcristatus, Bechst.
- 3 Small-billed grebe. P. canicularis, Brehm.

Third Division.

Northern grebes. *Podiceps septentrionales*.

- 1 The great-horned grebe. *Podiceps cornutus*, Latham.
- 2 The small-horned grebe. *Podiceps bicornis*, Brehm.
- 3 Icelandic northern grebe. *Podiceps arcticus*, Boje and Fabr.

Fourth Division.

Eared grebes. *Podiceps auriti*.

- 1 Black-necked eared grebe. *Podiceps nigricollis*, Brehm.
- 2 Red-necked eared grebe. *Podiceps auritus*, Linnæus.

Fifth Division

Dwarf grebes. *Podiceps minuti*.

- 1 Hebridian grebe. *P. hebridicus*, Latham.
- 2 Middle grebe. *P. minor*, Latham.
- 3 Small grebe. *P. pygmaeus*, Brehm.

GENUS II.

Diver. *Colymbus*. — *Lath.*

First Division.

Ice divers. *Colymbii glaciales*. (*Colymbus glacialis*, Linn.)

- 1 Iceland ice diver. *C. glacialis*, Linn.
- 2 Great diver. *C. maximus*, Brehm.
- 3 Winter diver. *C. hiemalis*, Brehm.

Second Division.

Polar divers. *Colymbii arctici*. (*Col. arcticus*, Linn.)

- 1 Great polar diver. *C. arcticus*, Linn.
- 2 Long billed polar diver. *C. macrorhynchus*, Brehm.
- 3 Baltic diver. *C. balticus*, Hornschuch.

Third Division.

Red-throated divers. *Colymbi rufigulares*. (*Colymbus et septentrionalis, striatus et borealis*, Linn.)

- 1 Northern red-throated diver. *C. septentrionalis*, Linn.
- 2 Northeastern red-throated diver. *C. Lumine* of Brunnich and Brehm.
- 3 Northwestern red-throated diver. *C. borealis*, Bruenn.

SECOND PRINCIPAL DIVISION.

Use both feet and wings in diving. *Colymbidæ non solum pedum, sed etiam alarum ope mergentes*.

GENUS I.

Guillemot. — *Lumme*. *Uria*. — *Briss.*

- 1 Foolish guillemot. *Uria troile*, Lath.
- 2? White-ringed guillemot. *U. leucopsis*, Brehm.
- 3 Norwegian guillemot. *U. Norwegica*, Brehm.
- 4 Brunnich's guillemot. *U. Brunnichi* of Sabine.
- 5 Polar guillemot. *U. polaris*, Brehm.
- 6 Brehm's guillemot. *U. unicolor*, Brehm.

GENUS II.

Tystie. *Cephus*. — *Cuv.*

- 1 North European tystie. *C. grylle*, Cuvier.
- 2 Long-billed tystie. *C. arcticus*, Brehm.
- 3 Meisner's tystie. *C. Meisneri*, Brehm.
- 4 Faroe tystie. *C. Faroensis*, Brehm.
- 5 Ice tystie. *C. glacialis*, Brehm.

GENUS III.

Mergulus of *Ray*. Rotche. Little awk.

- 1 Flat-crowned rotche. *M. alle*, Ray.
- 2 High-crowned rotche. *M. arcticus*, Ray.

GENUS IV.

Coulterneb. Mormon. — *Illig.*

- 1 Northern coulterneb. *M. fratercula*, Temm.
- 2 Ice coulterneb. *M. glacialis*, Leach.
- 3 Polar coulterneb. *M. polaris*, Brehm.
- 4 Grabas coulterneb. *M. Grabæ*, Brehm.

GENUS V.

Awk. *Alca*. — *Linnaeus*, Cuvier, Temminck, Ray.

- 1 Eastern awk. *A. Balthica*, Brehm and Bruennich.
- 2 Razor bill, or marrot. *A. torda*, Linn.
- 3 Ice awk. *A. glacialis*, Brehm.
- 4 Icelandic awk. *A. islandica*.

GENERA PROCELLARIA, HYDROBATES, PUFFINUS,
SULA, AND CARBO.

GENUS I.

Fulmar. *Procellaria*. — *Linnaeus*, &c.

- 1 Ice fulmar. *Pr. glacialis*, Linn.
- 2 Winter fulmar. *Pr. hiemalis*, Brehm.

GENUS II.

Petrel, or Peter's bird. *Hydrobates*. — *Boje*.

- 1 Faroe petrel. *Hyd. Faroensis* of Graba and Brisson
- 2 Stormy petrel. *H. pelagicus*, Boje

GENUS III.

Storm Diver, or Puffin. *Puffinus*. — *Brisson*.

- 1 Northern puffin. *Puff. arcticus*, Faber.
- 2 Mank's puffin. *Puff. anglorum*, Brehm.

GENUS IV.

Gannet. *Sula*. — *Brisson*.

- 1 Great gannet, or solan goose. *S. major*, Brisson.
- 2 Bass gannet, or solan goose. *S. Bassana*, Brisson.

GENUS V.

Cormorant. *Carbo*. — *Gesmer*.

- 1 Common cormorant. *C. cormoranus*, Meyer.
- 2 Ice cormorant. *C. glacialis*, Brehm.
- 3 Tree cormorant. *C. arboreus*, Brehm.
- 4 Small cormorant. *C. subcormoranus*, Brehm.
- 5 Crow cormorant. *C. graculus*, Meyer
- 6 Short-tailed cormorant. *C. brachyuros*, Brehm

THE END.

EDINBURGH :

Printed by ANDREW SHORTREED, Thistle Lane.

